

July/August 2009 \$5.00

# POWERLINE

The Voice of the On-Site Power Generating Industry

EGSA  
7

## Clean Diesel Funding

Helping Industry  
and the Environment

## Cogeneration

Is it Right for Your Facility?

## Coren Scholarships

2009-2010 Academic Year  
Winners Announced

# Load Banking

Best Practices



T H E   E N E R C O N   C A P A B I L I T Y

# POWER

FAST / RELIABLE / READY WHEN YOU ARE

*Through the years, Enercon has developed a reputation for meeting these power requirements with high quality custom engineered power generation products.*

*With over 36,000 projects in 85 countries around the world, Enercon is a leader in the power generation industry.*

*Our low and medium voltage switchgear, engine-generator controls, power generation packages and enclosures, and mobile power modules are custom engineered to meet the toughest requirements and your specific needs.*

*For more information on Enercon, our products, and services please give us a call or log on to our website at [www.enercon-eng.com](http://www.enercon-eng.com).*



CUSTOM SWITCHGEAR • CONTROL SYSTEMS • PACKAGING • POWER MODULES • ENCLOSURES • CO-GENERATION

1.800.218.8831 • [WWW.ENERCON-ENG.COM](http://WWW.ENERCON-ENG.COM)



## Columns

From the Top . . . . .	7
Membership Has Its Privileges.	
Education . . . . .	10
Coren Scholarship Winners Announced	
Codes & Standards . . . . .	12
EPA Regulations Tighten Controls.	

## Features

Clean Diesel Funding Helps Industry and Environment . . . .	16
Load Banking Best Practices . . . . .	20
Evaluating Cogeneration for Your Facility . . . . .	24

## Departments

Opportunities Calendar . . . . .	4
Association and industry events.	
Index of Advertisers . . . . .	6
Who's who in this issue of <i>Powerline</i> .	
EGSA Membership Application . . . . .	29
It pays to be a member of EGSA!	
Industry News. . . . .	31
The latest reports.	
New EGSA Members . . . . .	33
See who's just joined EGSA.	
Job Bank . . . . .	34
Looking for a new job?	



*Under the Diesel Emissions Reduction Act (DERA), diesel is getting cleaner and more efficient every day. Page 16.*



*Use load banking to verify system operation, commissioning, maintenance and to certify system capacity. Page 20.*

### Correction

On page 22 of the July/August 2009 issue of *Powerline*, the feature story "IBC Seismic and Wind Requirements for Power Generation Equipment" contained a misspelling in the author's name. The author was Aniruddha Natekar, Sales Application Engineer, Cummins Power Generation Inc.

We apologize for the error.



Aniruddha Natekar

## Industry Trade Shows

### POWER-GEN International 2009

December 8-10, 2009; Las Vegas Convention Center, Las Vegas, NV  
The world's biggest show for power generation, featuring the EGSA On-Site Power Pavilion. For exhibit information, contact EGSA at (561) 750-5575, ext. 205 or e-mail Jalane Kellough at [J.Kellough@EGSA.org](mailto:J.Kellough@EGSA.org).

### Renewable Energy World North America Conference & Exposition

February 23-25, 2010; Austin, TX  
Technical sessions relate to technology, markets, business strategies and policy covering the wind, solar, biomass, hydro, geothermal, ocean/tidal/wave, bio-power, bio-fuels hydrogen and energy sectors. The Photovoltaics World Conference & Exposition will be co-located with Renewable Energy World North America 2010. For more information, visit [www.renewableenergyworld.com](http://www.renewableenergyworld.com).

## Conferences

### EGSA 2009 Fall Technical & Marketing Conference

September 13-15, 2009; Colorado Springs, CO

Speakers will cover business and technical aspects of On-Site Power Generation and current industry trends. Registration information is available online at [www.EGSA.org](http://www.EGSA.org) or call (561) 750-5575.

### EGSA 2010 Annual Spring Convention

March 14-16, 2010, St. Petersburg, FL

The Association's Annual Convention of Members. Speakers will cover business and technical aspects of On-Site Power Generation and current industry trends. For additional information, visit [www.EGSA.org](http://www.EGSA.org) or call (561) 750-5575.

## Schools

### EGSA On-Site Power Generation Basic Schools

Portland, OR..... August 4-6, 2009  
Memphis, TN..... October 13-15, 2009

### EGSA On-Site Power Generation Advanced Schools

Las Vegas, NV\* ..... December 7-10, 2009

\*To be held concurrently with POWER-GEN International

The most complete overview of an On-Site Electric Power Generation System available anywhere today. Now offering Continuing Education Units (CEUs)! For information, visit [www.EGSA.org](http://www.EGSA.org) or call (561) 750-5575.

Look for more industry events in our up-to-date calendar on the web at [www.EGSA.org](http://www.EGSA.org). EGSA Members: To list your meetings here, fax your information to (561) 395-8557.



**CREATIVE SOLUTIONS FOR YOUR  
UNIQUE REQUIREMENTS.**

Remember Chillicothe Metal when seeking superior design and fabrication services. Chillicothe Metal, a name worth remembering. Take a load off your mind with Chillicothe Metal's total service approach to power systems integration and equipment protection. Our experience,

resources, innovation, and willingness to design around your specific needs-even on the most challenging specifications-are why we are tops in the generator packaging industry. From start to finish, it's Chillicothe Metal Co., Inc. Call 309.274.5421 or visit us at [cmcouusa.com](http://cmcouusa.com).



# Generator Control Switchgear Nothing comes close to **RUSSELECTRIC CONTROL!**



*Automatic and manual control*



When it comes to emergency backup power, redundancy is key.

No other generator control switchgear offers as much control flexibility and redundancy as Russelectric.

All Russelectric systems feature fully redundant PLCs. If the primary fails, the secondary PLC automatically takes over system-wide control.

Manual start and paralleling controls allow operation of the system in the event that automatic control is lost.

A touchscreen operator interface permits system monitoring and parameter selection on site. Automatic and manual load controls ensure proper system operation under all conditions—even if the touchscreen fails.

In addition to on-site controls, custom SCADA allows remote monitoring and control of any Russelectric system, new or old.

*With Russelectric, you are always in control.*

1-800-225-5250  
[www.russelectric.com](http://www.russelectric.com)

**Russelectric**  
POWER CONTROL PEOPLE YOU CAN RELY ON

## INDEX OF ADVERTISERS

Anna, Inc. . . . .	10
ASCO Power Technologies . . . . .	36
Avtron Mfg. . . . .	10
Baldor Electric Company. . . . .	35
Chillicothe Metal Co., Inc. . . . .	4
ComRent International . . . . .	8
Davidson Sales . . . . .	9, 32
DEIF . . . . .	11
Diesel Gas & Turbine Publications . . . . .	19
Enercon Engineering, Inc. . . . .	2
Flight Systems . . . . .	33
Generator Solutions. . . . .	31
Global Cable & Electronics . . . . .	23
JRS Custom Fabrication, Inc. . . . .	22
Mid-America Engine . . . . .	23
Miratech . . . . .	7
MTS Power Products. . . . .	12
Power Products, Inc. . . . .	32
Pritchard Brown, LLC . . . . .	8
Ring Power . . . . .	28
Robinson Custom Enclosures . . . . .	32
Russelectric, Inc. . . . .	5
Taylor Power Systems, Inc. . . . .	18
Wabash Power Equipment Co. . . . .	23
Wexler CSD Ltd. . . . .	33

### Disclaimer

*Powerline* magazine is wholly owned and operated by the Electrical Generating Systems Association (EGSA), and includes advertising, press releases, editorials, and other materials and information submitted by third parties, and gathered by EGSA, its publisher, and its agents, and from contributors. This information is passed along by EGSA for the interest of its members only. With regard to products, services, and information mentioned, advertised, or printed, EGSA, its publisher, and its agents, do not investigate the merit, accuracy, or value of the material or information, and make no representations, warranties, or endorsements of any kind, and hereby disclaim any responsibility to parties using such products, services, or information. Readers' activities are at their own risk.

With regard to editorials, letters to the editor, columns, and any other opinions expressed herein, EGSA, its publisher, and its agents, do not ratify, adopt, endorse, or verify such opinions, and hereby state that any opinions, express or implied, are solely those of the speaker. No information is to be regarded as legal advice and reliance thereon and accuracy of statements is hereby disclaimed.

With regard to information contained herein generally, EGSA, its publisher, and its agents, do not guarantee, represent, or verify the accuracy of any information. EGSA, its publisher, and its agents, endeavor to provide accurate information, but cannot guarantee the accuracy and hereby disclaim liability for any reliance on the information contained herein.

EGSA, its publisher, and its agents, make no representations, warranties, or endorsements of any kind of the information, opinions, and advertisements contained herein, do not assert the accuracy of any statements, and all reliance thereon is hereby disclaimed.

### 2009 EGSA OFFICERS

#### President

Greg Linton, JRS Custom Fabrications, Inc.

#### President Elect

Ron Hartzel, Eaton Corporation

#### Vice President

John Kelly, Jr., Kelly Generator & Equipment, Inc.

#### Secretary-Treasurer

Michael Pope, Süd-Chemie, Inc.

#### Immediate Past President

Warner Bauer, Kickham Boiler & Engineering, Inc.  
Vaporphase Div.

### 2009 EGSA DIRECTORS

Vaughn Beasley, Ring Power Corporation

David Brown, Kohler Company

Charles Habic, Gillette Generators, Inc.

Joe Hafich, Emergency Systems Service Company

Bobby McDonald, Generator Service Company, Inc.

Al Prosser, MTU Onsite Energy

Dennis Roundtree, Onsite Power Inc.

Greg Walters, Kim HotStart Company

Mike Witkowski, Pritchard Brown

### EGSA STAFF

Jalane Kellough, Executive Director

Donald Ferreira, Dir. Communications & Publications

Cara Collins, Manager, Conventions & Meetings

George W. Rowley, Director of Education

Liz Bustamante, Membership Manager

Herbert V. Whittall, Technical Advisor

### SERVICE INFORMATION

FOR SUBSCRIBER ORDERS, CHANGE OF ADDRESS, REPRINTS,  
AND BACK ISSUES (WHEN AVAILABLE), CONTACT:

Editor, *Powerline* magazine

1650 S. Dixie Hwy, Suite 400 • Boca Raton, FL 33432

Ph 561/750-5575 • F 561/395-8557

E-mail: [e-mail@egsa.org](mailto:e-mail@egsa.org)

*Powerline* is published six times per year on a bi-monthly basis. Articles and information submitted for publication should be forwarded to the attention of the Editor at the address above 30 days prior to publication. Technical articles and articles of general interest to the electrical generation industry are actively sought and encouraged. *Powerline* reserves the right to limit information appearing in its pages to that which, in its sole discretion, will reflect positively on EGSA and the industry which it serves.

Throughout every issue of *Powerline*, trademark names are used. Rather than place a trademark symbol at every single such occurrence, we aver here that we are using the names in an editorial fashion only. EGSA has no intention of infringing on these trademarks.

Electrical Generating Systems Association

1650 S. Dixie Highway, Suite 400

Boca Raton, FL 33432

561/750-5575 • Fax 561/395-8557

[e-mail@egsa.org](mailto:e-mail@egsa.org) • [www.EGSA.org](http://www.EGSA.org)







Greg Linton  
2009 EGSA President

## Membership Has Its Privileges

According to American Express, membership—that elusive and exclusive stamp of status—has its privileges. What about membership in EGSA, does it have privileges? Let's explore and see.

First, are you aware that EGSA has a Membership Committee designed to attract and retain new members? They meet during each conference and discuss possible methods of increasing membership and attracting new members to our association. They establish goals, assign tasks, compile to-do lists and set deadlines to accomplish the mission of membership retention and growth. Between conferences, they communicate their successes and progress with regular email updates. In reflecting on the work they do as a group, they certainly believe that EGSA membership has its privileges—but what are they?

### The Privileges of EGSA Membership

**An opportunity to meet, interact and get to know a wide variety of key industry professionals.** These opportunities occur during the Spring and Fall conferences as well as during the annual POWER-GEN show. EGSA conferences offer a number of receptions, dinners and other social events as well as committee meetings that facilitate this privilege and further develop the association with your involvement. Each conference affords you the unique opportunity to have a captive audience comprised of approximately 200 of the most influential people in our industry.

While attendance at POWER-GEN is not exclusive to EGSA membership, **member-exhibitors enjoy first choice of space in the EGSA Power Pavilion**, based on previous exhibition space usage history. The Power Pavilion neighborhood is replete with exhibitors representing similar and complimentary products and services attracting potential customers to come and discover the benefits of doing business with your company. In many cases you are being exposed to the coveted "decisionmakers" of our industry.

**Advertising in Powerline and listing within the EGSA Buying Guide provide additional member privileges.** The *Buying Guide* is refreshed and published annually and provides member companies a place to list and advertise their products and services. It is distributed to over 29,000 interested industry professionals. While the publication is reproduced annually, coveted back issues are hoarded and kept close at hand in offices and on desktops for years. *Powerline* magazine is published 6 times per year and offers a reduced rate structure for member companies. In a word, it is CHEAP advertising. Cheap **targeted** advertising. Cheap targeted advertising to the people you are trying to reach to get your message understood and accepted—a very effective way to create a brand name for your company.

EGSA's educational tools, schools, and programs are available to everyone—members and non-members alike. But (I have been told it is important to be on the right side of the but)



## Decisions, Decisions, Decided.

Be Decisive – Buy your Power Gen engine emission control elements from MIRATECH, the only company that offers all of the Power Gen emission control products you want, the post-sale support you need and the technical field service you expect.

**TRUST MIRATECH FOR BETTER CUSTOMER SUPPORT, QUALITY PRODUCTS AND LOWER EMISSIONS.**

Visit: [MIRATECHCORP.com](http://MIRATECHCORP.com)

Contact: [info@miratechcorp.com](mailto:info@miratechcorp.com)

Call: 800.640.3141

EMISSIONS SOLUTIONS FOR INDUSTRIAL ENGINES

MIRATECHCORP.COM • 800.640.3141  
420 SOUTH 145TH E. AVENUE • TULSA, OK 74108

members receive EGSA products and services at a reduced rate and notice of their availability in a more timely fashion through email blasts, committee communications, during conferences, etc. Some of the educational tools create privilege simply by association. Over the past several years, EGSA has awarded 10 to 12 scholarships per year to qualified students under the auspices of the David I. Coren Memorial Scholarship Program. Indeed, it is a privilege to be a member of an association that is giving back and investing in the future leaders of our association and our industry.

**Consider these additional privileges of membership:** marketing data; conference educational programs; the opportunity to influence the industry through your involvement; the opportunity to be recognized for your contributions to the industry and our association; a mechanism

to keep the pulse of the industry and so much more.

I started this column by discussing the Membership Committee, which is presently led by Bob Hafich. Ten years ago when I joined EGSA during my first conference, I attended the Membership Committee; at the time, it was led by Steve Stoyanac. There were 447 members. Steve Stoyanac begat Randall Nunmaker who begat Charlie Habic who begat Bob Hafich and ten years later we have just eclipsed 700 members. Congratulations to the present membership team and to those who led and served before. Your efforts have yielded great results. What's more, those results were achieved during financial downturns in 2000, 2008 and now in 2009. Great work!!

So, EGSA membership does indeed have privileges. Amazingly enough, it is through and because of those members that we are able to provide the privileges we all enjoy.

It's a self-funding model. You join and participate; money is collected; at the direction of the membership, that money is reinvested in products, services and programs that benefit you. Neat concept!

If you're not a member of EGSA, why wait? There is an application on page 29 towards the back of this magazine designed with you in mind. Today would be a great day to begin realizing the value of membership personally.

If you are currently a member of EGSA, plan on making the most of your membership by joining us in Colorado Springs, September 13-15. This year's Fall Technical & Marketing Conference is designed with you in mind; it reaches its maximum value when you come and participate. I'll see you then. ■



## PROTECT THE TECHNOLOGY THAT PROTECTS THE WORLD.

Pritchard Brown, LLC, the Industry Leader in Technology, Service, Quality and State-of-the-Art Design for Enclosures and System Integration.

- Over 50 years of shelter manufacturing experience.
- Strategically located for domestic and worldwide markets.
- U.L. classified enclosures and U.L. listed base tanks, extensive electrical options and total flexibility.
- Professional sales and engineering staff.
- Integrated EMI/RFI shielding available.
- High performance, maintenance free materials.
- Weather proof environment for service personnel.
- Outstanding reputation for quality and service.

**Baltimore, MD 800.231.2258 Fax 410.483.5695**  
**info@pritchardbrown.com www.pritchardbrown.com**





## RIGHT, READY & RELIABLE LOAD BANK RENTALS



### Medium Voltage Load Banks

Resistive/Reactive  
5000kV/3750kVAR @ 13.8kV  
4000kW/3000kVAR@4160VAC

### Low Voltage Load Banks

Resistive/Reactive  
4kW-5000kW Models  
4-3750kVAR Reactive  
100kW Suitcase Load Banks  
UPS and FedEx Ready  
120VAC-600VAC  
600VAC up to 4000kW

## ComRent® International, LLC



13 Locations, Nationwide Coverage  
International Shipping Available  
Inventory Center in Canada Opening Soon

**888-881-7118** **www.comrent.com**

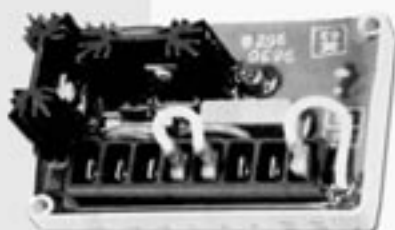




PROMPT DELIVERY • BEST VALUE  
LARGEST INVENTORY



- VDO Gauges
- Kim Hotstart Heaters
- Marathon Voltage Regulators
- Panelsource Control Panels
- SENS Battery Chargers
- Korfund Vibration Isolators



**Call 800-383-2078 for quotation or product information**

P.O. Box 9086 • Daytona Beach, FL 32120 • 386-274-2079 • Fax 386-274-2279

Visit us at our website: [www.davidsonsales.com](http://www.davidsonsales.com) • email: [dsc@davidsonsales.com](mailto:dsc@davidsonsales.com)



George Rowley  
EGSA Director  
of Education

## David I. Coren Scholarship Program Winners Announced

This is the seventh (2009-2010) academic year in which EGSA will award scholarships to deserving students who plan to seek employment in our industry after completing their studies. This year, up to 12, \$2,500 scholarships will be awarded and the funds will be distributed to recipients in August. The scholarship program is named to honor David I. Coren\*. The competition for scholarships is keen and they are awarded on the basis of merit. In addition to having a minimum 2.8 (A=4) Grade Point Average, applicants must be full-time students seeking a degree that is relevant to our industry. Typically, scholarship recipients have demonstrated a very high level of commitment to on-site power generation and to seeking employment in the industry, are involved in several extra-curricular activities, and have a high GPA.

Twenty-one students applied for a scholarship this year and that equals the all-time high in terms of the number of applicants. The applicants were from the following schools: Pennsylvania College of Technology (6 applications); Linn State Technical College, Missouri (5); Universal Technical Institute, Arizona (5); Ohio Technical College (2); Central Community College, Nebraska (1); and Clemson University (1).

We are pleased to present the David I. Coren Scholars for Academic Year 2009-2010. (Please check the next issue of Powerline where we will present photographs and biographical sketches of the recipients.)

### Renewal Applicant

Clifford G. Milner (Clemson University; BS – Mechanical Engineering GPA: 3.96)

### First Time Applicants

- John J. Albany (Penn. College of Tech; AAS – EPG; GPA: 3.68)
- Dwayne E. Aquino (Universal Tech Institute; EPG – Cummins Certificate; GPA: 3.56)
- George D. Bopst (Penn. College of Tech.; AAS – EPG; GPA: 3.78)
- Christopher T. Davidson (Linn St. Tech Coll; AAS – EPG; GPA: 3.94)
- Thomas R. Geib (Ohio Technical College; EPG; GPA: 3.35)
- Jason M. Hirtzel (Penn. College of Technology; AAS – EPG; GPA: 4.0)
- Chase M. McDonald (Okla. State – Okmulgee; AAS – Diesel Technology; GPA: 4.0)
- Kyle J. Norek (Penn College of Tech; AAS – EPG; GPA: 3.48)
- Robert A. Petersen (Universal Tech Institute; EPG – Cummins Certificate; GPA: 4.0)
- Nathan L. Shepherd (Linn St. Tech College; AAS – EPG; GPA: 3.86)
- Christopher R. Smith (Linn St. Tech College; AAS – EPG; GPA: 3.74)

### Certification Program Update

As of the end of May, 267 techs had passed the certification test and have become EGSA Certified Generator Systems Technicians. The number

power generation issues?  
we've got solutions

**ANNA** Inc.

www.annainc.com

**MINUTEMAN**  
LOAD BANK

- ULTRA-COMPACT - ONLY 65 LBS!
- 100 KW SUITCASE STYLE
- CONTINUOUSLY RATED
- LEGENDARY AVTRON QUALITY

EGSA MEMBER SINCE 1988

**AVTRON**

WWW.LOAD-BANK.COM  
(216) 573-7600 • FAX: (216)-573-5953

of certified techs working outside of the United States also continues to grow and now totals 22; there are 13 Certified Technicians in Canada, 8 in Trinidad, and 1 in Guam. Since program launch, the overall pass rate is 83%. Congratulations to all that have passed the test and good luck to those that are preparing to take it.

## Reference Book Update

Work continues on preparing the new edition for publication and we are making progress although at a slower pace than we initially planned. That said, we have received the first draft of one chapter and expect two or three more within the next several weeks. The Author Selection Committee continues the process of approving authors. This process is slow because a number of prospective authors have not yet submitted their credentials and chapter visions for committee review. We continue to attempt to identify authors for a few chapters and topics within chapters. We will soon begin a process to select a professional style editor to edit each chapter. It is premature to anticipate when the book will be ready to print.

If you have questions or comments about EGSA Education programs, please contact George Rowley, EGSA Director of Education at [G.Rowley@EGSA.org](mailto:G.Rowley@EGSA.org) or 561-237-5557. ■

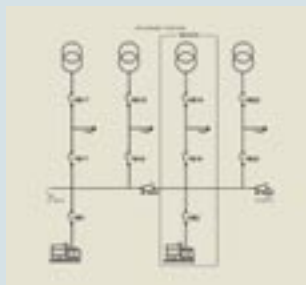
## About David I. Coren

David I. Coren received his Bachelor Degree from the University of Illinois while earning his CPA license. After working in the financial sector for nearly a decade, he began his career in On-Site Power at Zenith Controls, headed by his father and 1978-79 EGSA President Arthur Coren. David became active in Zenith's business development group, strategic planning and marketing. He worked closely with Executive Vice-President and 1998 EGSA President Ron Seftick and was eventually named President of Zenith Controls. At the same time, David became highly active in EGSA by serving as a Conference Presenter, serving on the Convention Planning Committee and chairing the committee in 1998. Sadly, in April of 1999, he was diagnosed with a brain tumor; in September of 2000, we lost him.

David is best remembered by his strong desire to succeed, his potential for leadership within EGSA and his ability to motivate his fellow Association Members in serving the industry. EGSA established the David I. Coren Memorial Scholarship Fund as a means to help those wanting to contribute and work in the On-Site Power Industry. Since its inception, EGSA has provided scholarships to over 60 deserving students and has enabled them to pursue meaningful On-Site Power careers.



## Advanced gen-set control – easy as AGC



Your PC tool visualizes it – the AGC realizes it. Change your controller design with just a few modifications using only one PC configuration tool. No compromises on quality and reliability.

### New advanced AGC

- Multiple standard applications
- Advanced Power Management
- Engine control center
- Flexible controller configuration
- CANbus Engine communication (ADEC and 11 different J1939 protocols)



The DEIF Group – Head office in Denmark with subsidiaries in Norway, Germany, UK, France, China, Brazil, USA and India

DEIF, Inc. · 2057 Vermont Drive · Fort Collins, CO 80525 · Tel.: (970) 530-2261 · Fax: (970) 530-2557 · [us@deif.com](mailto:us@deif.com) · [www.deif.com](http://www.deif.com)

Distributors in the United States: Generators of Houston and Leitor, Inc.



-power in control-





Herb Whittall  
EGSA Technical Advisor

# EPA Regulations Tighten Controls

EGSA recently sent out an Action Alert concerning upcoming EPA regulations that will impact our industry by tightening controls on emissions. I expect even more such legislation under the current administration. I hope EGSA members and *Powerline* readers took the time to comment.

The *Proposed Air Toxics Standard for Reciprocating Internal Combustion Engines* covers RICE engines not already covered by earlier EPA Regulations. Specifically, engines that have a rating of 500 horsepower or less, located at major sources of air pollution and built or rebuilt before June 12, 2006 and engines rated at 500 horsepower or more at such sites and built or rebuilt before December 19, 2002.

These engines may be in standby operation for electricity generation, fire pumps or flood control. These engines must now be fitted with aftertreatment to control emissions of formaldehyde, benzene acrolein and others. The EPA mentions the need for oxidation catalyst and particulate filters. The aftertreatment must reduce these toxics by 90 percent, including particulates.

The EPA estimates the rule will cost between \$930 million to \$2 billion through full implementation in 2013 and \$345 million per year after. Comments on the rule were due June 3.

After a thorough scientific review ordered in 2007 by the U.S. Supreme Court, the EPA issued a proposed finding that greenhouse gases contribute to air pollution that may endanger public health or welfare.

The proposed finding, which now moves to a public comment period, identified six greenhouse gases that pose a potential threat: CO<sub>2</sub>, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. The analysis also found that climate change has serious implications for national security. No regulations were proposed, but the House of Representatives has recently passed new legislation—the American Clean Energy and Security Act (ACES) H.R. 2454—to address the issue. Meanwhile, I hope that you have already submitted your comments.

I voted on four ISO documents and as of May 21, I was the only eligible voter among 12 in the U.S. who had voted. They were ISO 3046-3 *Reciprocating Internal Combustion Engines (RICE) Performance – Test Measurement*; ISO 7967-9 *ICE Vocabulary – Control and Monitoring Systems*; ISO 8178-11 *ICE Exhaust Emission Measuring – non-road mobile machinery under transient conditions* and ISO 21006 – *ICE Engine Weight (mass) Declaration*.

I also voted to allow UL 1012 *Standard for Power Units other than Class 2*, to become an ANSI Standard.

I voted for a proposed NFPA Tentative Interim Amendment (TIA) to the 2010 version of NFPA 110 – *Standard for Emergency and Standby Power Systems*. The TIA brings Sections 7.13.4.1.3(a) and 7.13.4.3.4 in line with the change to section 7.13.4.1.3(j) which changed the required on-site installation test from 2 hours to 1 ½ hours. ■

## BUY DIRECT FROM THE MANUFACTURER!

More Than 30 AVR Models Available

EA08A-2000 AVR

An analog option for some Digital AVR  
 > IGBT power output  
 > 2 pole PMG  
 > A1 and A2 Inputs +/- 3 v  
 > Single Phase Sensing up to 500 Volts

GCU-20 Controller

- > Voltage Regulators
- > Engine Controls
- > Battery Chargers
- > Mufflers
- > Auto Transfer Switches
- > Governors
- > Water/Fuel Separators

4501 NW 27 Ave · Miami, FL 33142 · 1-305-634-1511 · [www.mcphersoncontrols.com](http://www.mcphersoncontrols.com)



# STIMULUS OPPORTUNITIES

**Scheduled Educational Sessions Include:**

**Opportunities for Growth in  
the Current Economy—*Peter Ricchiuti***

**The Energy Policy Landscape:  
Opportunities for EGSA members—  
*Richard Reisig***

**Smart Grid Systems  
for the Battlefield—*Michael C. Padden***

**Applying Micro Turbines and  
Controls to Accommodate CHP Plants  
and Smart Grids—*Timothy D. Tawoda***

**Colorado's Experiences with Energy  
Project Stimulus Funding—*Patti Case***

**And More!!!**

**2009 EGSA FALL TECHNICAL & MARKETING CONFERENCE**

**September 13-15, 2009 • Colorado Springs, CO**

**Register online at [www.EGSA.org](http://www.EGSA.org)**



# Stay on Top of Your Game with EGSA's Electrical Generator Systems Technician Certification Program



Think things move pretty fast in today's business world? Think how fast they'll be moving one, five or even 10 years down the road. That's why you need every advantage to stay on top.

It's no secret that technology is becoming more complex—not less—and that makes today's On-Site Power Generation System a lot more expensive. End-users—your customers—don't want just anybody with a basic knowledge of mechanics to install and maintain their equipment. They want to be confident that all work has been performed by qualified personnel. Suppliers want assurance that skilled technicians are performing maintenance and repairs to guard against unnecessary returns or warranty repairs.

## AS GOOD AS YOUR WORD

In the past, your word was the only assurance that your technicians are skilled and knowledgeable. But now, through EGSA's Electrical Generator Systems Technician Certification Program, there is a way that you can back up those words with objective evidence of your technicians' proficiency.

EGSA offers you a big advantage: For the first time in our industry, we have an objective and accurate way to determine generator technician proficiency. That means that the same standards will be used to measure the skills and knowledge of technicians from Maine to Manitoba and Mexico. Yes, Manitoba and Mexico! EGSA has determined that there is no reason why the test could not be fairly applied to any NAFTA technician.

## WHAT ARE THE BENEFITS?

For the Employer, certification helps ensure that your technicians have the critical knowledge and skills to succeed in their jobs. And everyone will be comfortable knowing that your certified technicians' expertise has been confirmed by the industry organization through a program that was developed by a university. Encouraging and helping your technicians become certified signifies your commitment to the highest of standards. Plus, it lends an added level of credibility to your firm and can

sharpen your competitive edge. Employing certified technicians will promote customer satisfaction and you won't have to be shy about offering assurance that your technicians are qualified. Certification can also help you select potential new hires, analyze job performance, evaluate employees and motivate technicians to enhance their skills and knowledge.

Think about the message that certification sends to those with whom you do business. Why would anyone want a technician who isn't certified performing critical maintenance or repair tasks? Employing certified technicians gives you an added tool with which to market your business.

As our members have said, "We've seen too many backyard mechanics damage expensive equipment. This program will provide credibility for my company and will help build pride and a commitment from technicians to be the best."

## FOR THE TECHNICIAN

Certificate holders benefit too. Certification shows employers, clients, and associates that you are committed as a professional. It provides recognition of your knowledge and skill, shows your commitment to your profession and can help with job advancement. Certification is a mark of excellence that you carry with you everywhere you go.

Acquiring certification indicates that you have the knowledge and proficiency required to perform as an Electrical Generating Systems Technician professional. Becoming certified can increase your salary, enhance your skills, and make your job more satisfying.



*Certification helps ensure that your technicians have the critical knowledge and skills to succeed in their jobs.*



## THE CERTIFICATION TEST

EGSA collaborated with Ferris State University to develop the certification test and program. Through a scientific process, our panel of technical experts identified 12 duty areas (such as “Basic Electricity”) and 61 tasks (such as “demonstrate knowledge of AC electrical theory”) within the duty areas. The duty areas and tasks were ranked and rated in terms of their relative importance, the frequency with which a task is performed, and skill level (i.e. Senior/Expert; Intermediate; and Entry Level.) All this data was combined to develop the certification test that was then statistically validated through a pilot test taken by generator technicians from across the United States.

## WHO CAN TAKE THE TEST?

There are no pre-qualifications for taking the EGSA Certification test. We recommend three or four years of field experience before taking the test. Technicians who have had formal education in On-Site Power Generation (a degree or certificate from a technical school or community college) may need less field experience. Those who pass the test will have a comprehensive knowledge of basic electricity, the functions of a gen-set’s mechanical and electrical components, the interactions and relationships among components and an understanding of various elements of the installation, service, maintenance, and repair of gen-sets and On-Site Power Generation Systems.



### CERTIFICATION TESTING COVERS:

- |   |                          |
|---|--------------------------|
| • Automatic Transfer Switches                 | • Basic Electricity      |
| • Communication & Documentation               | • Prime Movers           |
| • Engine Generator Instrumentation & Controls | • Governors              |
| • Multiple Generator Switchgear & Controls    | • Voltage Regulators     |
| • Troubleshooting System Problems             | • Generators/Alternators |
| • Auxiliary Support Systems                   |                          |

## USE THE STUDY GUIDE TO PREPARE!

Use of the program’s Study Guide is an excellent way to help technicians prepare for the test and should clearly indicate if they are ready to take (and pass) the certification exam. In addition to useful formula pages, the guide contains almost 200 multiple choice practice questions that cover all parts of the certification test. In addition to identifying the correct answer, the guide also indicates in most cases why a particular choice is correct and why the others are incorrect. The

Guide also identifies resource material where technicians can get additional or more in-depth information about a given topic.

Need more information? Visit us online at [www.EGSA.org](http://www.EGSA.org) to find extensive and detailed information about the certification program. Or contact EGSA Director of Education George Rowley via e-mail at [G.Rowley@EGSA.org](mailto:G.Rowley@EGSA.org).

## DISCLAIMER OF LIABILITY

*Certified status is an indication that an individual has completed a combination of defined education, experience or examination requirements. However, Certification is not a guarantee or assurance of the competence or ability of any particular individual. Further, given the rapid changes in the field, the Electrical Generating Systems Association cannot warrant that the Examination and other Certification materials will at all times reflect the most current state of the art.*

*The Electrical Generating Systems Association disclaims liability for any personal injury, property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the Certification Program or the acts or omissions of any person who has been Certified by the Electrical Generating Systems Association. In conducting the Certification Program, including issuing Certifications, the Electrical Generating*

*Systems Association is not undertaking to render professional or other services for or on behalf of any person or entity, nor is the Electrical Generating Systems Association undertaking to perform any duty owed by any person or entity to someone else. Anyone using the services of a person who has been Certified should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.*

**Electrical Generating Systems Association**  
1650 S. Dixie Hwy, Suite 400 • Boca Raton FL 33432  
561-750-5575 • Fax: 561-395-8557 • [www.EGSA.org](http://www.EGSA.org)



# Clean Diesel Funding Helps Industry and Environment

By Dawn Fenton, Director, Policy, Diesel Technology Forum

Last month EPA Administrator Lisa Jackson visited Columbus, Ohio to recognize the Ohio Department of Development as the first winner of stimulus funds for the Diesel Emissions Reduction program under the American Reinvestment and Recovery Act. Some folks might wonder why a President who talks about clean, green energy is funding diesel power rather than wind and landfill gas to energy projects. However as EGSA members and others in the diesel world know, diesel power's unique characteristics make it an important bridge technology. Not only does clean diesel provide the opportunity for greater use of renewable fuels and hybrid technology, but it is used to implement seemingly unrelated environmental projects such as those providing clean water, landfill gas to energy and recycling. Thanks to the diesel industry's efforts and the development of the Diesel Emissions Reduction Act (DERA), diesel is getting cleaner and more efficient every day.

## The Diesel Emissions Reduction Act

DERA was created to improve air quality, particularly in those counties that are in non-attainment with the EPA's particulate matter and ozone standards. Although the EPA's regulatory program was bringing the cleanest diesel vehicles and equipment to market, the durability and longevity of diesel engines meant that 30 years could pass before an entire fleet turnover would bring the cleanest diesels into operation. As a result, diesel power producers, users, environmental groups and government agencies worked together to develop a program



EPA Administrator Lisa Jackson visited Columbus, Ohio to recognize the Ohio Department of Development as the first winner of stimulus funds for the Diesel Emissions Reduction program under the American Reinvestment and Recovery Act (ARRA).

to reduce the emissions of older diesel vehicles and equipment which still had many good years of work ahead of them.

DERA was proposed by Senators Voinovich (R-OH) and Carper (D-DE) and with the help of this unusual coalition, the Diesel Emissions Reduction Program was created as part of the Energy Policy Act of 2005 as a voluntary, national and state-level grant and loan program authorizing \$200 million a year for five years (\$1 billion) for retrofitting diesel vehicles and equipment. Seventy percent of the funds would be dedicated to a national competitive program administered by the EPA with

the remaining 30 percent allocated to state governments—20 percent is divided evenly among those who establish their own retrofit programs; the final 10 percent is divided among states that provide matching funds for their portion of that 20 percent.

Several studies have proven diesel retrofits to be among the most cost-effective ways to reduce PM and NOx emissions. The term retrofit can be defined narrowly to describe the application of an exhaust stream emissions control device such as a filter or catalyst (see graphic at top of opposite page). However, it can also be defined more broadly to include repowering (engine re-

## The Diesel Technology Forum

The Diesel Technology Forum—a new EGSA member—is a non-profit educational organization dedicated to raising awareness about the economic importance and essential uses of diesel engines, highlighting the continuous improvements in fuel efficiency and emissions reductions, continuous progress to reduce the environmental impact of the existing fleet of diesel engines, and leading the way for future clean diesel technology in all applications. It represents the leaders of the diesel industry including engine and equipment makers, key component manufacturers, fuel producers and emissions control technology manufacturers.

Since it was founded in 2000, the Forum has served as a

leading information source on clean diesel and energy issues, and its leadership regularly participates in legislative and regulatory deliberations, technology demonstrations, and industry and media events. The Forum brings together a broad range of diesel stakeholders including diesel users, public and environmental interest groups, and government regulators to encourage the exchange of information, findings and ideas about the current and future use of diesel technology. Elected officials, regulators, members of the media and other opinion leaders count on the Forum for data, insight and expert commentary.

The Forum's web site – [www.dieselforum.org](http://www.dieselforum.org) – serves as a one-stop gateway for information and sources on clean diesel.

*All five types of diesel retrofits are covered under the Diesel Emissions Reduction Act (DERA)*

### The Five R's of Diesel Emissions Reduction



placement); repair (engine upgrades); refueling (using cleaner fuels) and replacement (retiring a vehicle/equipment and replacing it with a new model). As a result, every diesel vehicle or piece of equipment is a retrofit candidate if for no other reason than it can be retired and replaced with a new, more efficient model. Nevertheless, not all options are available for every application, nor do they all improve fuel economy. As a result vehicle and equipment owners must consider a number of factors in pursuing a retrofit project including age, duty cycle, fuel availability, vehicle design and cost, just to name a few.

#### Funding Availability

Although the DERA program is authorized to provide \$200 million annually for diesel retrofits, the first funds did not become available until FY08 due to Washington's convoluted funding process and growing budget demands. In that year, DERA received \$49.2 million, which according to the program's 70/30 split structure, left \$14.8 million for division among the 50 states, with the remaining \$34.4 million available through the EPA's national competitive programs (\$27.6 million for the clean diesel funding assistance program along with \$3.4 million for the EPA Smartway clean financing program and \$3.4 for emerging technologies). Altogether more than 230 applications were received for the primary \$27.6 million, requesting more than \$144 million.

The program's initial success helped attract a slight funding increase in FY09, (\$60 million with an additional \$15 mil-

lion for California); however the real boost came thanks to President Obama's stimulus program, including an additional \$300 million dedicated to DERA. The availability of substantial funds during the recession led to fierce competition among applicants far beyond the traditional bus, truck and construction equipment sectors, resulting in approximately 600 national clean diesel competition applications requesting \$1.7 billion with matches totaling \$2 billion.

Fierce competition among applicants across geographic regions and industry sectors will cause many good applications to remain unfunded. These applicants, together with those who were unable to compile complete applications during the brief 45 day application window, still have a chance to compete for funding either through their state program (each state received \$1.7 million in stimulus funds for diesel retrofits under the state portion of the DERA program) or through EPA's FY09 DERA solicitation which is expected to open this fall. Companies interested in applying should monitor the EPA National Clean Diesel Campaign website or their local diesel collaborative website for solicitation information and application deadlines.

#### A Source of Funds to Help Meet New Regulations?

By 2013, it is expected that stationary reciprocating internal combustion engines that are not already covered by earlier EPA regulations will be required to meet new emissions standards. According to the proposed rule, all engines of 500hp or less that

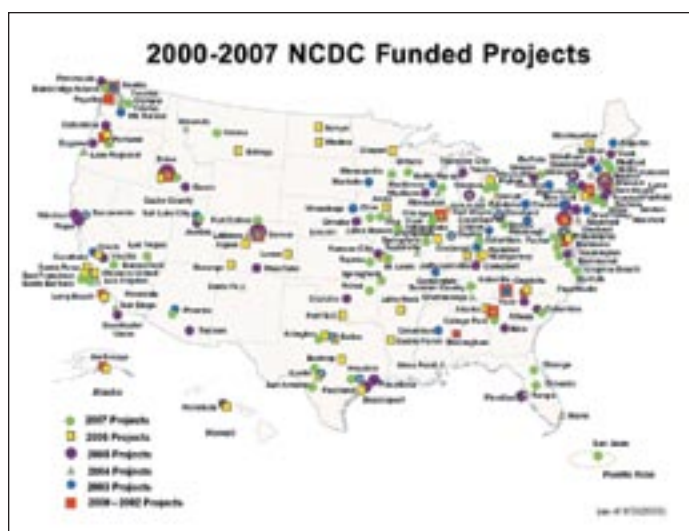
were manufactured before June 2006 and engines greater than 500hp manufactured before 2002 must be retrofitted with an exhaust control device. While the final rule may be modified to reflect concerns raised in several hundred comments submitted to the EPA, there is little doubt that stationary diesel engine users will escape the retrofit pressure faced by all other diesel engine users.

To date most diesel generator owners have not pursued funding for engine retrofits since their infrequent use as back-up or emergency power sources account for an extremely small percentage of overall emissions compared to on-road and other off-road diesel engine applications. Nevertheless, the EPA is eager to see all sectors take advantage of the program and has tried to reach out to diesel generator users. While DERA funds cannot be used to fund retrofits that are required by law, they can be used for early compliance. As a result, EGSA members would be wise to take a serious look at the potential business opportunities that can be advanced with DERA funds. As communities increasingly evaluate all sources of emissions, particularly in urban and suburban settings, diesel engines and equipment—including generators—are viewed as opportunities for reducing localized emissions.



*The Diesel Technology Forum is a resource for diesel vehicle and equipment owners looking to learn more about diesel retrofits.*





Since 2000, the EPA has awarded more than 300 grants for diesel emission reduction projects nationwide through the National Clean Diesel Campaign.

### Where to start?

There are plenty of resources to help EGSA members learn more about the DERA program and provide a competitive application for funds. As a fellow member of EGSA, I would encourage you to visit the Diesel Technology Forum's website at [www.diesel-forum.org](http://www.diesel-forum.org) where you can find a wealth of information about retrofit

technology, the DERA program (as well as other grant opportunities), and tips for writing a competitive grant application. We work closely with the EPA, equipment manufacturers and non-profit organizations, and can answer many questions you might have or refer them on to others with more specific expertise.

The other most important resource for learning about the DERA program is your EPA regional diesel collaborative. These groups exist in every EPA region across the country and are made up of a variety of stakeholders who all have a common interest in diesel power. Diesel generator users have been less engaged in these groups than other users, however some large generator OEMs such as Caterpillar and Cummins are actively involved in many regions. You can register for most diesel collaborative email lists which will keep you informed about grant solicitations, conference calls and meetings. You should also email the EPA staff person in the collaborative so they can potentially help you establish contact with others having similar interests. A link to each collaborative is available at <http://www.epa.gov/otaq/diesel/prgnational.htm>

If you're based in California, you know that the Air Resources Board has verified a range of technologies for reducing particulate matter and some other emissions. Currently the ARB has verified at least six specific devices for stationary prime and emergency standby power, along with a number of other verified technologies depending on the engine hp and age. The number of generators and other equipment was estimated by the ARB during its rule-making process in 2003. At the time, California estimated that there were over 18,000 diesel generators operating in the state, with two-thirds of those estimated to be back-up only.

**TAYLOR**  
**POWER SYSTEMS®**  
 9 kW to 2,000 kW

you can depend on  
**TAYLOR POWER**  
 when you need it and where you need it

461 US Highway 49 S • Richland, MS 39218-9410  
 Phone: 601-932-5674 • Fax: 601-932-4028  
 Contact John Scarborough  
[jscarborough@taylorpower.com](mailto:jscarborough@taylorpower.com)

**taylorpower.com**  
 Dealer Inquiries Are Welcome!

## Looking Ahead

Now that awareness about the DERA program has grown, the challenge will be to keep the program's funding consistent with the level of interest. Earlier this year more than 360 industry, non-profit and governmental organizations signed a letter to the House and Senate Appropriations Committees asking that the full \$200 million in authorized funding be provided. Representatives Matsui (D-CA) and Shimkus (R-IL) authored a similar letter cosigned by 41 Colleagues encouraging full funding to the Appropriations committee chairmen. A similar effort is expected in the Senate, although today's economic climate and growing budget deficit will make it difficult to reach this level. Whatever funding level is finally approved will likely be combined with the FY09 levels to allow for a more sizable allocation of funds to EPA regional offices and states, masking the actual lower annual appropriations levels.

While interested parties should continue to communicate their interest in higher DERA funding levels to their Members of Congress, the bigger imperative will be to get the DERA program extended beyond 2011 when the original program authorization expires. Interested parties must begin advocating with Members of Congress for an extension of the program, with the most effective messengers being grant winners who can document the economic and environmental benefits of the funding they received and the constituents who were uninformed about or unsuccessful in the previous competitions and can argue that these benefits can be multiplied and provide local benefits through the program's continuation.

Diesel engines are the workhorse of our economy. They



*Regional Diesel Collaboratives are public-private voluntary organizations which correspond to EPA regional offices providing education and networking for governmental, private and non-profit stakeholders who are interested in reducing diesel emissions.*

provide power for on and off-road vehicles and equipment that touch virtually every industry. Our nation faces economic and environmental challenges and an upgrading of our diesel power infrastructure could go a long way in simultaneously providing jobs and security, conserving energy and improving our environment, providing a win-win-win solution. Wouldn't it be nice if we could get always bet on those odds? ■

## Global Coverage Of The Power Generation Markets

### Industry News . . . from Kilowatts to Megawatts









Print, Digital, Online – Your Choice — We Deliver

Visit Us at [www.DieselPub.com](http://www.DieselPub.com)



**DIESEL  
PROGRESS**  
PUBLISHED BY RESOURCES INTERNATIONAL



**DIESEL &  
GAS TURBINE  
WORLDWIDE**  
The Marine and Industrial Power Authority



**GSGnet.net**



# Load Banking Best Practices

By Lyndon B. Risser, CEO, DynaTech Power



Photo 1: Load banking can verify system operation, commissioning and maintenance as well as certify system capacity. Here a load testing mobile unit is used to test a portable generator.

Because real-world facility load is often dispersed, unpredictable and random, load bank testing is essential. Load banking is a technique used to determine maximum back-up power system performance and should be performed regularly. A load bank is a self-contained unit that applies controlled load on a power system. It consists of load elements with controls that allow an operator to incrementally step and vary the load. For total peace of mind, load banking is the method of choice to verify system operation, commissioning and maintenance as well as certify system capacity (see Photo 1 above).

## Why Load Bank Test?

Load banking is a critical requirement to ensure that generator owners enjoy the full potential of their emergency backup power equipment and that it will perform as expected when pressed into service.

Since emergency generators must be sized to accommodate the full startup load of a facility, they are generally sized above the entity's normal operating load if a load management system is not in place.

Generators are commonly sized as much as 30 percent over the kW rating of a facility to accommodate the surge of the building and equipment startup load. This situation creates a challenge with diesel powered generators. Conditions such as wet stacking and carbon buildup in combustion chambers, injector nozzles, piston rings, turbo chargers, exhaust piping and silencers can develop.

Wet stacking is best described as unburned fuel that accumulates in diesel exhaust. It can be detected by black seepage around exhaust connections or continuous black exhaust from the stack after warm up. Exhaust gas temperature of 275 degrees Fahrenheit must be maintained to

avoid wet stacking (see Photo 2). With the increasing awareness of exhaust pollution, regular loadbanking is an important contribution on the generator owner's part to minimize exhaust pollution in their communities.

Wet stacking is common when diesel engines operate for extended periods of time with little or no load applied. To operate at peak efficiency, the engine must be able to provide the proper ratio of fuel and air and maintain the right temperature to burn that fuel completely. EPA requirements have resulted in dramatic improvements in engine design while the use of electronic controls has resulted in increased performance.

Every client should require load bank testing when commissioning an emergency power system to ensure proper installation, adequate cooling at ambient temperature, sufficient fuel delivery, and proper load transfer.





Photo 2: Record temperature at turbo and after turbo during load test.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)<sup>1</sup> guideline 1-1996 defines commissioning as “the process of ensuring that the systems are designed, installed, functionally tested and capable of being operated and maintained to perform in conformity with the design intent...”

To test performance, load bank testing should be performed annually (for a minimum of two hours) for standby applications. During weekly exercises, the engine will not reach manufacturer’s recommended operating temperatures. The National Fire Protection Association (NFPA 110)<sup>2</sup> has established the standards for monthly maintenance and operation for standby generators that states, “Generators should be exercised monthly at 30 percent of the nameplate rating or loaded to the minimum engine exhaust temperature recommended by the engine manufacturer.”

## Planning

Load banking can create unexpected results. In many cases, the engine has not been tested to its capacity since the manufacturer’s testing at the factory. If regular load banking was not instituted as part of a preventive maintenance plan, then the older the engine, the greater the risk of operational breakdown during testing. As a surgeon would review the potential consequences with his patient prior to an operation, it is important that you review the worst case events with your client prior to subjecting their facility to the potential risks of generator failure during a test. Test results will reflect the level of neglect or underutilization experienced by the power system.

## The Loadbanking Process

1. Logistics are important. Be conscious of the load bank’s proximity to anything that could be affected by heat. The heat leaving a load bank can destroy plants, trees and discolor the paint on objects that are too close to or in the direct path of exhaust air. It is also important that the load bank is situated in free air space for adequate cooling.
2. The emergency switchgear should be disabled to avoid accidental transfer to facility load.
3. Ideally, the load bank should be connected to the load side of the generator breaker. When connecting the transfer switch, confirm that the cable size is rated to carry the full amp load encountered between the transfer switch and the generator breaker.
4. Cable rated to carry 100 percent of the rated load should be used to connect the load bank to the generator. For every additional 100 feet of cable required, cable size should be increased to the next largest cable size.
5. Notify the facility manager of start time and estimated completion time.
6. Verify that all cables point-to-point have secure termination, proper insulation, and correct phasing. All cables should be color coded prior to installation to simplify verification.
7. Start generator and allow a 5 to 10 minute warm-up period.
8. Apply load in steps allowing 15 to 30 minutes between steps.
9. Closely monitor the engine for leaks, oil pressure and temperature. Be prepared to quickly remove load if problems arise.
10. Block load (switch the existing load including last step by switching master switch) each step to record the generator’s ability to pickup the load in one step (see Photo 3). Measure the exhaust temperature and compare to manufacturer recommendation for engine and exhaust filter if installed. Recent emissions requirements call for the installation of particulate filters creating the need to raise exhaust temperatures to 400-800 degrees Fahrenheit to meet the manufacturer’s requirement for effective regeneration.
11. Allow a 30-minute cool down period at the end of the test with no load.



Photo 3: Use the master switch to “block” load as you increase load.

The facility should be disconnected from the generator while testing to prevent overloading the generator. For this reason, life support and mission critical clients need to be advised of the load bank test, and staff must be notified in the event of

a blackout. Backup generators should be recommended where a blackout is not an option for the facility. Testing should be scheduled during the most favorable time of the day, week and month when interruption would be most manageable.

Load Bank Test Log								
Date	7.2.2009							
Customer	Embarq							
Job / Location	Harrisburg, PA							
Brand	Shindawa							
Ambient Temperature F	78							
Serial	247864							
kW	100							
Battery Voltage (running)	13.5							
Hz	60							
Hour reading at end	797							
Hour reading at start	801.5							
Total test time	4 hrs 30 min							
					<b>Parameters and Measurements</b>			
					1. Ideal operating temperature 165 - 190			
					2. Ideal operating exhaust temperature @ turbo 600 - 1200			
					3. Increase load @ 5-10 min intervals			
Time	Volts	Amps	Hz	Oil Psi	Water Temp F	Temp Exhaust F	kW	%
13:00	480	120	60.0	60	189	462	0	0%
13:10	480	120	60.0	60	200	520	25	25%
13:20	484	119	59.9	52	200	630	52	52%
13:30	489	119	59.8	49	210	728	77	77%
14:00	487	119	59.5	49	210	842	101	101%
14:15	487	119	59.5	49	210	862	101	101%
14:30	486	119	59.5	48	210	861	101	101%
14:45	486	119	59.5	48	210	861	101	101%
15:00	486	119	59.5	48	210	861	101	101%
15:15	486	119	59.5	48	210	861	101	101%
15:30	486	119	59.5	48	210	861	101	101%
15:45	486	119	59.5	48	210	861	101	101%
16:00	486	119	59.5	48	210	861	101	101%
16:15	486	119	59.5	48	210	861	101	101%
16:30	486	119	59.5	48	210	861	101	101%
16:45	486	119	59.5	48	210	861	101	101%
17:00	484	119	59.5	48	210	780	77	77%
17:30	480	120	60.0	48	200	538	0	0%
Technician Remarks:								
1. kW Output performance down from last test by 3%								
2. Exhaust temerature within manufacturer's recommendations								
3. Engine oil and temp performance within manufactures recommendations.								
4. Recommend replacing air filter								

Photo 4: A sample load test report.

Be aware of any local Environmental Protection regulations. For example, the New Jersey Department of Environmental Protection (NJDEP) requires you to log onto their website ([www.state.nj.us/dep/aqpp/aqforecast](http://www.state.nj.us/dep/aqpp/aqforecast)) to check the air quality conditions and forecasts BEFORE testing a generator to avoid heavy fines.

### Methods

There are two methods for load banking generators: resistive testing and reactive testing, with resistive load banking being the most common. The resistive method, which measures kW, but not kVA at the rated power factor, is ideal for testing the engine cooling system, exhaust system and the fuel delivery system. Reactive testing is a generator specific kVA test typically performed at the factory.

### Observations

1. If the exhaust has not cleared (smoke-free) during the test period, engine repair will be required. Extensive smoke is most often caused by rings that have never seated properly, a fuel pump that needs to be rebuilt or bad fuel.
2. If the temperature is not within the manufacturer's recommended range, the cooling system may need to be flushed to remove any restriction, or there could be a faulty thermostat or defective water pump.

**JRS**  
CUSTOM FABRICATION, INC.  
1 John 1:3 ☩

Phone: (352) 351-2100  
Fax: (352) 351-5881  
[www.jrscustomfab.com](http://www.jrscustomfab.com)

CHECK OUT OUR  
NEW FACILITY AT  
5000 N.W. 5th STREET  
OCALA, FL 34482

**TANKS • TRAILERS • ENCLOSURES**

3. If the oil pressure drops below the manufacturer's recommended range, the oil pump may need to be rebuilt or low pressure may be an indication of excessive engine wear that could signal the need for an engine overhaul.

### Documentation

Ideally a digital recorder should be connected to chart frequency, voltage and amperage, and document in one-second sampling. This information should be downloaded to graph a detailed performance report. Engine oil pressure and temperature should be documented at 25, 50, 75 and 100 percent of the nameplate rating of the generator (see Photo 4).

### Conclusion

Load bank testing should not be considered an option, but rather a critical element of your emergency preparedness plan. If you are the maintenance provider, consider it your responsibility to recommend load banking to your client. As a generator owner, make sure this is included as part of

your annual maintenance plan. There is no better way to have the peace of mind that you are prepared when the lights go out!

### References

<sup>1</sup>The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) [www.ashrae.org](http://www.ashrae.org)

<sup>2</sup>The National Fire Protection Association (NFPA 110) Standard for emergency and standby power systems. [www.nfpa.org](http://www.nfpa.org)

### About the author

Lyndon Risser is the CEO of DynaTech Power located in Lebanon, PA. Their primary focus is "Delivering Power and Confidence" through the sale, service and rental of emergency power equipment. For information, visit [www.dynagen.com](http://www.dynagen.com). Contact Lyndon at [lyndon.risser@dynagen.com](mailto:lyndon.risser@dynagen.com) ■

## FOR SALE / RENT

5.2 MW MOBILE GEN SETS  
CALL: 800-704-2002



SOLAR  
TAURUS 60

- GAS - LOW NOx (OIL)
- 60 Hz - 13.8KV or 50 Hz - 11KV
- LOW HOUR - SOLAR SERVICED

DIESELS • TURBINES • BOILERS

24/7 EMERGENCY SERVICE  
IMMEDIATE DELIVERY

[www.wabashpower.com](http://www.wabashpower.com) | [info@wabashpower.com](mailto:info@wabashpower.com)  
Phone: 847-541-5600 Fax: 847-541-1279

**wabash** POWER  
EQUIPMENT CO.

444 Carpenter Avenue, Wheeling, IL 60090

## CAMLOK CABLES & CONNECTORS

# Need Wire Now?

**We have been supplying the power generation industry since 1997. We have what you need and can deliver it when you need it!**

#### Bulk Wire

Type W  
DLO  
Stage  
SOOW  
High Voltage

#### Cables

Camlok Cables  
25', 50', 100' & up  
Pigtails  
Twist Lok  
Pin & Sleeve

#### Connectors

Camlocks  
Panel Mounts  
Adapters  
Lugs  
Battery Terminals

**Now with Two Locations  
Tampa & Atlanta**



(formerly Wire & Cable Connection)  
877-651-WIRE(9473)  
813-752-0900 Fax 813-754-8032  
Email [wirecable1@aol.com](mailto:wirecable1@aol.com)  
[www.wireandcableconnection.com](http://www.wireandcableconnection.com)

# Solar Taurus 60

Mid America Engine, Inc.  
POWER GENERATION SPECIALISTS

205-590-3505 · Fax: 205-590-3885

Wesley: [wtuggle@maegen.com](mailto:wtuggle@maegen.com)  
Art: [asigler@maegen.com](mailto:asigler@maegen.com)

Greg: [gposey@maegen.com](mailto:gposey@maegen.com)  
Keith: [kcoleman@maegen.com](mailto:kcoleman@maegen.com)

**MOBILE GEN SETS**  
5.2 MW Solar Maintained



- 7 Units (Gen 1) & (Gen 2)
- Mobile PCR U.G. Switch gear
- 50 Hz Conversion Available
- All Natural Gas
- Low Nox 25 ppm
- 60 Hz • 13.8 kV



# Evaluating Cogeneration for Your Facility

A look at the potential energy efficiency, economic and environmental benefits

By Joel Puncochar, Product Manager, Lean Burn Gas Generator Sets, Cummins Power Generation

Cogeneration, also known as Combined Heat and Power (CHP), is the on-site production of multiple types of energy – usually electricity, heat and/or cooling – from a single source of fuel. Cogeneration often replaces the traditional methods of acquiring energy, such as purchasing electricity from the power grid and separately burning natural gas or oil in a furnace to produce heat or steam. While the traditional method of purchasing electric energy from a utility is convenient, it is very inefficient and wastes almost 75 percent of the energy in the original fuel due to production and transportation losses.

**A cogeneration system normally consists of a prime mover turning an alternator to produce electricity and a waste heat recovery system to capture heat from the exhaust and engine cooling water jacket.**

On-site cogeneration systems convert 70-90 percent of the energy in the fuel that is burned into useful electricity or heat. Depending on the application, the integration of power and heating/cooling production into one on-site cogeneration system can often produce savings of up to 35 percent on total energy expenditures. If your facility is a big energy user, those kinds of savings can pay for installing a cogeneration system in as little as two to three years for some applications.

## A Technology for Today—Again

The principles of cogeneration have long been known and put to use in a wide variety of applications — from Thomas Edison's first electric generating plant in 1882, to modern chemical processing facilities, to municipal utilities supplying power and district heating. In the past, economies of scale favored large, complex projects or special situations. Today, however, advances in lean-burn gas reciprocating engine technology, heat exchangers and digital system controls make cogeneration both practical and economical for applications as small as 300 kW. This is causing

### CASE STUDY

## California Company Saves Money With Cogeneration

A recent economic analysis for a commercial facility in Southern California illustrates the energy cost savings that can be realized with a cogeneration system.

Before the system was installed, the facility:

- Consumed 12,400,000 kWh of energy per year with a peak electrical demand of 2,656 kW.
- Had an average cooling load of 500 tons with a peak of 1000 tons.

- Paid an average of \$0.1419 per kWh for electricity and \$0.55 per therm for natural gas.

To combat the high electricity charges from the utility, the facility owners chose to install an on-site CHP or cogeneration system to generate 80 percent of their electrical and thermal needs on an annual basis. Following are the system's characteristics:

- Prime mover was Cummins QSV91G lean-burn natural gas en-

gine generator (with selective catalytic reduction aftertreatment) that produced 1,250 kW of electricity.

- "Waste" heat from the generator engine was sufficient to power a 250-ton absorption chiller.
- Generator set typically operates at a 38.1 percent electrical efficiency and a 48.0 percent thermal efficiency – resulting in a net running cost of \$0.0648 per kWh and a net thermal output of 4,191,118 Btu/hr.

### Cost calculations

Total installed CHP system cost (after state rebate) ..	\$2,581,982
Projected annual electric savings .....	(\$1,280,123)
Generator operating costs (including fuel and maintenance) .....	\$631,792
Net annual cash flow from savings .....	\$648,331
Payback period .....	3.98 years

### Environmental savings

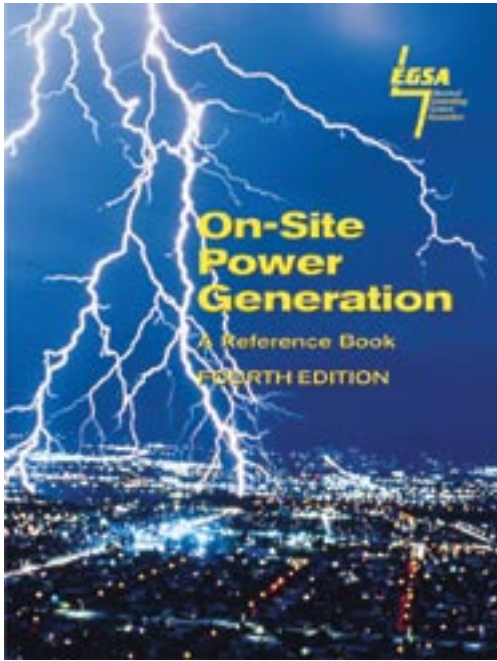
By displacing power generated by coal-burning utilities, this cogeneration system delivers significant reductions in greenhouse gas emissions in addition to energy savings.

Nitrogen oxide (NOx) reduction .....	6.14 tons/year
Sulfur dioxide (SO2) reduction .....	14.60 tons/year
Carbon dioxide (CO2) reduction .....	3,056 tons/year

You can see from the figures above that an on-site generator that produces both electricity and thermal energy

can cut total energy expenditures and greenhouse gas emissions by a significant amount. In this example, the cogeneration

system will pay for itself in less than four years, and thereafter provide annual positive cash flow for the facility.



# The Last Word In On-Site Power.

EGSA's *On-Site Power Generation: A Reference Book* is widely regarded by On-Site Power professionals as the "bible" of the On-Site Power Industry.

In fact, EGSA's *Reference Book* is so highly regarded and widely recognized that five of the seven technical schools that offer On-Site Power Generation Technician training programs have adopted the *Reference Book* as their text.

If the educators who helped train your Generator Technicians keep EGSA's *Reference Book* on hand, shouldn't you?



## The Book is in Stock! Order Your Copy Today!

*Published by the Electrical Generating Systems Association*

EGSA Member Price: \$125 (US) • Non-Member Price: \$225 (US)

\_\_\_\_\_ Copies x \_\_\_\_\_ (Price) = US\$ \_\_\_\_\_  
+ 6.5% Florida Sales Tax (FL residents only)\*\* \_\_\_\_\_  
+ Shipping\*\* \_\_\_\_\_  
TOTAL US\$ \_\_\_\_\_

### Quantity Discounts

0-4 = None

5-10 = 10%

11-20 = 20%

21-50 = 30%

Schools should contact EGSA  
for Academic Discounts!

For Shipping within the Continental U.S. (not including Alaska, Hawaii, or Puerto Rico): add \$5 per book for shipping costs.

For shipping outside the Continental U.S.: call (561) 750-5575 or fax (561) 395-8557 for a shipping cost quote.

### Payment

**IMPORTANT! FULL PAYMENT MUST ACCOMPANY THIS FORM.**  
Faxed forms **must** include credit card numbers or they will not be processed.

☐ My Check (payable to EGSA in U.S. funds) is enclosed.

☐ American Express    ☐ VISA    ☐ MasterCard

Card # \_\_\_\_\_

Name on card: \_\_\_\_\_

Exp. Date: \_\_\_\_\_ Security Code\*: \_\_\_\_\_

\*VISA/MC: the last 3 digits of the number printed on the back of the card;  
AMEX: 4-digit number above the card number on the front of card.

Credit Card Billing Address:  
\_\_\_\_\_  
\_\_\_\_\_

Signature: \_\_\_\_\_

### Shipping

Please Note: We do NOT ship to P.O. Boxes.  
Please provide a physical street address to avoid delays.

Ship to (Name): \_\_\_\_\_

Company: \_\_\_\_\_

Street Address: \_\_\_\_\_  
\_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Country: \_\_\_\_\_

Phone: \_\_\_\_\_

FAX: \_\_\_\_\_

Email: \_\_\_\_\_

Fax this form with payment to **561/395-8557**

Or mail this form with payment to EGSA • 1650 S. Dixie Hwy, Ste. 400 • Boca Raton, FL 33432

many more types of facilities – large and small – to take a fresh look at cogeneration as a way to improve energy efficiency, cut greenhouse gas emissions and reduce costs.

A cogeneration system normally consists of a prime mover turning an alternator to produce electricity, and a waste heat recovery system to capture heat from the exhaust and engine cooling water jacket.

**Cogeneration systems can offer energy savings of up to 35 percent while contributing to building sustainability and protecting the environment.**

The prime mover can be a lean-burn natural gas reciprocating engine, diesel reciprocating engine, gas turbine, microturbine or fuel cell. (See the sidebar below for more information on the prime mover options for cogeneration systems.) While the ratio of heat to electricity production differs between reciprocating engine systems and gas turbine systems, as much as 90 percent of the energy in the original fuel is put to productive use in a cogeneration system.

Less than 10 percent of the electricity used in the United States today is produced by cogeneration systems, but the Department of Energy (DOE) has established a goal of doubling installed cogeneration capacity by 2010. The European Union has established a similar target. Switzerland, where cogeneration accounts for 77 percent of the country's electricity, and Denmark (40 percent), are already well ahead of the curve.

### Is Your Facility a Candidate for Cogeneration?

The first step in deciding whether a cogeneration system is right for your facility is to perform a quick analysis of your energy use. This analysis can be reduced to a few simple questions. If you answer "yes" to all the questions, then you may be a good candidate for a more comprehensive analysis.

- 1 Have you taken all reasonable steps to reduce both electric and heat energy consumption at your facility? Obviously, if you can make improvements in the way you use energy in your facility, these changes will translate into lower operating costs and perhaps reduce the size of the cogeneration system needed as well as your investment.
- 2 Is the base electrical load at your facility greater than 1000 kW? While cogeneration systems incorporating

## Cogeneration System Comparisons

The heart of a cogeneration system is the prime mover, and each technology option – reciprocating natural gas engine, gas turbine or fuel cell – has characteristics that may make one or another better suited to your particular application. In general, systems based on reciprocating engines offer the greatest electrical output per Btu of input energy and the highest overall efficiency. Reciprocating engine cogeneration systems represent the largest share, by far, of all installed cogeneration systems. Both the reliability and availability of most cogeneration systems are in the range of 90–95 percent. Here are some characteristics of typical cogeneration systems.

**Lean-burn gas engine generator cogeneration systems:** Recent advances in natural gas engine combustion technology have created a reciprocating engine generator system with excellent performance and very low emissions. Lean-burn engine generators from Cummins Power Generation feature emissions of less than 0.5 grams of NOx per brake horsepower-hour. Without exhaust aftertreatment, these generators are suitable for high-hour use in most geographic areas of the United States. With exhaust aftertreatment, these systems

are suitable for even the most environmentally sensitive areas of the country—such as California's southern coast.

These systems also feature fast availability and installed costs that are about one-half that of cogeneration systems based on gas turbines. Practical systems range in size from 300 kW to 10 MW or more electrical output, and 1.5 MBtu to 45.2 MBtu thermal output.

**Gas turbine generator cogeneration systems:** Systems based on microturbines or larger gas turbines have the advantage of greater thermal output per Btu of input. Although costing considerably more per kW of capacity, and having somewhat lower overall efficiency than reciprocating engine-based cogeneration systems, turbine-based systems have slightly higher availability and lower maintenance. Gas turbines have been favored for very large cogeneration systems where high-quality heat or high-pressure steam is a required output for industrial processing. The size of gas turbine systems ranges from 30 kW to hundreds of megawatts. Emissions are similar to that of a lean-burn gas engine generator cogeneration system.

**Fuel cell cogeneration systems:** Fuel

cells convert a fuel (usually natural gas) directly into electricity and heat without going through a typical combustion process. The main byproduct is water. While fuel cells are very clean and reliable, they are the most expensive to purchase of all available cogeneration technologies. Most installations to date have been demonstration projects.

### Information resources

The Association of Energy Engineers:  
[www.aeecenter.org](http://www.aeecenter.org)

Buildings Cooling, Heating, and Power (BCHP) Initiative:  
[www.chpcentermw.org](http://www.chpcentermw.org)

Electric Power Research Institute (EPRI):  
[www.epri.com](http://www.epri.com)

Midwest Cogeneration Association:  
[www.cogeneration.org](http://www.cogeneration.org)

U.S. Clean Heat & Power Association:  
[www.uschpa.org](http://www.uschpa.org)

U.S. Department of Energy (DOE): [www.eere.energy.gov](http://www.eere.energy.gov)

LEED Rating System, U.S. Green Building Council:  
[www.usgbc.org](http://www.usgbc.org)

EPA: [www.epa.gov/chp/basic/calculator.html](http://www.epa.gov/chp/basic/calculator.html)



smaller generating systems are available, facilities with larger energy needs can generate proportionately larger savings and a shorter payback period. The most cost-effective cogeneration systems operate at full output 24/7. To make sure your cogeneration system is running at full capacity most of the time, only plan on generating a portion of your total electric and thermal needs – about 50–80 percent. You'll still need a utility connection to supply the remainder of your load and an on-site boiler to handle peaks in your thermal demand.

- 3 Is the thermal load at your facility consistent and equivalent to 1 million Btu/hr or more? This could take the form of hot water, an absorption chiller load, low-pressure steam — or a combination of all three. Excess electrical power is a salable commodity that can sometimes be fed back into the grid for additional savings if allowed by your utility. Heat production is necessarily restricted to on-site or district heating use. Excess heat is usually released as waste heat, lowering overall efficiency.
- 4 Is the duration of your simultaneous need for heating/cooling and electric power greater than 4,000 hours per year? While some applications are feasible when simultaneous electric and thermal demand is around 2,000 hours per year, economics favor systems that operate at least half the year. Thermal processing loads at industrial facilities tend to be rather constant, whereas space-heating or space-cooling loads are seasonal. Facilities with substantial space-heating needs in the winter and space-cooling needs in the summer are generally good candidates for cogeneration systems.
- 5 Are local electric rates high in relation to the local cost and availability of natural gas? Known as the “spark-spread,” the greater the differential between the price of electricity and the price of natural gas (on an equivalent Btu basis), the greater the likelihood that a cogeneration system will provide substantial savings.
- 6 Is your physical site suitable for the installation of a cogeneration system? You'll need sufficient space to house

the generators, heat-exchangers, switchgear and control systems. Small systems can be located outdoors in special packaged enclosures; however, larger systems may need their own room or freestanding building. There also needs to be a supply of natural gas to the facility. Environmental factors should also be considered, such as state and local air-quality standards and noise ordinances.

- 7 Is reliability of electric service a major economic concern? For many commercial and industrial facilities, a power outage can be very costly due to lost productivity or revenue. In many areas of the country, utilities are incapable of delivering the kind of reliability that is necessary. In contrast, on-site cogeneration systems – when designed with sufficient redundancy, standby generators and uninterruptible power supply (UPS) systems – offer significantly better reliability than local utilities. On-site power systems are less vulnerable to storm damage and transformer or transmission line failures, and, with proper maintenance, will offer decades of reliable operation.

### Analyzing Costs and Payback

If your answers to many or all of the above questions are affirmative, then your facility is a likely candidate for a cogeneration system. The next step in determining the viability of a cogeneration system for your facility is to do a simple cost analysis and calculate the number of years it will take for such a system to pay for itself.

A cost analysis is best done with the help of a representative from a system manufacturer or a consulting engineer familiar with cogeneration systems. However, the factors that go into the calculation are:

1. electricity costs per kWh;
2. electricity demand charges;
3. cost of natural gas per million Btu;
4. number of anticipated hours of operation per year;
5. utilization of recovered heat; and
6. installed cost of the cogeneration system.

This information is used to estimate the annual savings and payback for your facility. *(For a sample payback analysis, see the Case Study on page 24.)*

## Cogeneration offers a win-win for businesses and the environment.

### Environmental Factors

Cogeneration is a technology that offers a win-win for businesses and the environment. Greater use of natural-gas-based cogeneration systems would have the effect of displacing electricity produced by the nation's power grid. Since the lion's share of this power is produced by older coal-fired power plants, a reduction in electric demand would reduce carbon dioxide, nitrogen oxides, sulfur dioxide, particulates and other noxious emissions. In terms of CO<sub>2</sub> emissions alone, burning natural gas in an on-site reciprocating engine generator produces less than half of the CO<sub>2</sub> produced by an equivalent amount of coal burned in a central power plant. In this way, cogeneration is a technology that reduces pollution overall and helps in the fight against global warming. In addition, since CO<sub>2</sub> production is directly related to amount of fuel burned, cogeneration's significantly greater fuel efficiency reduces CO<sub>2</sub> emissions overall while lowering costs and conserving natural resources. Cogeneration systems can also make users eligible for carbon credits for their CO<sub>2</sub> reduction.

If your facility is considering LEED certification (Leadership in Energy and Environmental Design), you may be aware that the LEED-NC (New Construction) standards now include a requirement for two energy optimization credits; facilities can earn one of these credits by installing a cogeneration system. LEED is a green building rating system developed by the U.S. Green Building Council that provides a number of standards for environmentally sustainable construction. In addition to addressing water usage, indoor environmental quality and innovative building design, LEED addresses both energy usage and the atmosphere. An emerging LEED standard includes a requirement for reducing a facility's “carbon footprint,” primarily emissions of carbon dioxide (CO<sub>2</sub>). By displacing the energy that would normally be produced by central power plants that burn fossil fuels, cogeneration systems sig-

nificantly reduce the amount of carbon and other pollutants that are released into the atmosphere.

To help facility managers calculate the amount of reduction in greenhouse gases and fuel that can be achieved with a cogeneration system, the U.S. Environmental Protection Agency (EPA) has created an online tool. This interactive tool can help facility managers or consulting engineers

evaluate the environmental and energy-saving benefits of cogeneration. This calculator can be found at [http://www.epa.gov/chp/documents/chp\\_emissions\\_calc\\_103006.xls](http://www.epa.gov/chp/documents/chp_emissions_calc_103006.xls)

### CHP Candidate Applications

Advancing technology has made cogeneration systems suitable for a much wider range of applications than in the past, although the simultaneous need for electric power and heat or cooling is common to all cogeneration applications. Facility types that are good candidates for cogeneration today include:

- Hospitals
- Greenhouses
- Hotels
- Industrial/chemical plants
- Manufacturing
- Commercial facilities
- Government facilities
- Colleges and universities
- Food processing plants
- Health clubs/swimming pools
- Nursing homes

### Conclusion

Cogeneration systems that produce both electricity and heat/cooling from the same fuel can offer energy savings of up to 35 percent for a wide range of facilities, while at the same time contributing to building sustainability and protecting the environment. The potential for cost savings in energy expenditures is usually the motivating reason to consider cogeneration, but building sustainability and LEED certification are becoming reasons on their own to investigate the potential benefits of cogeneration for your facility.

For more information, contact your consulting engineering firm or power system manufacturer. ■

**Less than 10 percent of the electricity used in the U.S. today is produced by cogeneration, but the Department of Energy has set a goal of doubling installed cogeneration capacity by 2010.**

# Don't be left in the dark.



For information, contact our St. Augustine offices or visit our website.

**Ring Power®**



Power Systems Division

Ring Power sells and rents a variety of Caterpillar® generators and other specialty power generation equipment to keep you up and running, no matter what!

- **GENERATORS** (up to 16 mW)
- **LOADBANKS** (up to 5000 kW)
- **ELECTRIC AIR COMPRESSORS**
- **ELECTRIC CHILLERS**
- **UPS** (uninterrupted power supply)
- **FUEL SYSTEMS**
- **FINANCIAL SOLUTIONS BY CAT POWER FINANCING**

**904.494.1269**

**[www.ringpower.com](http://www.ringpower.com)**



# Application for Membership

## ELECTRICAL GENERATING SYSTEMS ASSOCIATION

1650 South Dixie Highway, Suite 400, Boca Raton, FL 33432 • 561-750-5575 • FAX 561-395-8557  
E-Mail: [e-mail@EGSA.org](mailto:e-mail@EGSA.org) • World Wide Web: [www.EGSA.org](http://www.EGSA.org)

*Under the leadership of its Board of Directors and operating through its various committees and staff, EGSA strives to educate, provide networking opportunities and share relevant knowledge and trends with industry professionals including manufacturers, distributor/dealers, engineers, manufacturer representatives, contractor/integrators and others serving On-Site Power consumers.*

### 1. Contact Information

*Please type or print all information in upper and lower case (NOT ALL CAPS!)*

Company \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State/Province \_\_\_\_\_  
Zip/Postal Code \_\_\_\_\_ Country \_\_\_\_\_  
Phone \_\_\_\_\_ FAX \_\_\_\_\_  
Official Representative \_\_\_\_\_ Title \_\_\_\_\_  
Representative's E-Mail \_\_\_\_\_ Company's Web Address \_\_\_\_\_  
How did you hear about EGSA? ☐ Web site ☐ Powerline magazine ☐ Colleague ☐ POWER-GEN ☐ Other \_\_\_\_\_  
Why are you joining EGSA? ☐ Certification Program ☐ CEU Program ☐ Power Schools ☐ Buying Guide Listing ☐ Other \_\_\_\_\_

### 2. Member Classification

*Read the Membership classifications below and check the box that describes your firm's classification.*

#### I. FULL MEMBERSHIP

- ☐ **MF Manufacturer Membership**  
Any individual, sole proprietor, partnership or corporation seeking membership must apply for a Full Membership as a manufacturer if they meet one or more of the following criteria:
1. They manufacture prime movers for power generation.
  2. They manufacture generators or other power conversion devices producing electricity.
  3. They manufacture switchgear or electrical control devices.
  4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution.
  5. They are a wholly owned subsidiary of a firm that qualifies under rules one through four.
- ☐ **DD Distributor/Dealer Membership**  
Any individual, sole proprietor, partnership or corporation actively engaged as a distributor or dealer for products listed under Manufacturer Membership may apply for Full Membership as a Distributor/Dealer. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ **CI Contractor/Integrator Membership**  
Any individual, sole proprietor, partnership or corporation actively engaged as a Contractor or Equipment Integrator of products listed under Manufacturer Membership, not bound by brand, geographic territory or contractually obligated as a Distributor/Dealer of a specific product. These firms typically purchase products from a Distributor/Dealer, Manufacturer or Retailer, adding value through installation, product knowledge, relationships, unique services, etc., and then re-sell the resulting product to an end-user.
- ☐ **MR Manufacturer's Representative Membership**  
Any individual, sole proprietor, partnership or corporation actively engaged in the representation of products listed under Manufacturer Membership may apply for Full Membership as a Manufacturer's Representative. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ **EM Energy Management Company Membership**  
Any individual, sole proprietor, partnership or corporation engaged in energy management, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for Full Membership as an Energy Management Company.
- ☐ **Associate Full Membership (mark appropriate category at right)**  
Any individual, sole proprietor, academic institution, student, partnership or corporation meeting the requirements of Associate Regular Membership may apply for Full Membership at their option to enjoy the privileges of Full Membership, including the rights to vote and to serve on EGSA's Board of Directors. Initiation fees and annual dues will be assessed at the existing non-manufacturer Full Member rates.

#### II. ASSOCIATE REGULAR MEMBERSHIP

- ☐ **AA Trade Publication Membership**  
Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership—Trade Publications.
- ☐ **AB Trade Association Membership**  
Any trade association made up of individual or company members sharing a common interest in the electrical generating systems industry may apply for Associate Membership—Allied Associations.
- ☐ **AC Engineer Membership**  
Any consulting or specifying engineer may apply for Associate Membership—Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ **AD End-User Membership**  
Any individual employee of a company who owns or operates electrical generating equipment and/or related switchgear or components, whose responsibility to his employer includes planning, design, installation, supervision, or service of such equipment may apply for Associate Membership—User. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ **AE Service Membership**  
Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership—Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ **AG Educational Institution Membership**  
Any postsecondary vocational-technical school or college offering on-site power generation-related instruction may apply for Associate Membership—Education Institution.
- ☐ **AR Retiree Membership**  
Any individual who retires from a member company may apply for Associate Membership—Retired. This classification does not apply to any individual who is employed more than 20 hours per week.
- ☐ **AF Student Membership**  
Any individual currently enrolled at an academic institution may apply for Associate Membership—Student.



## Application for Membership – page 2

### Dues Schedule (Use for Section 3)

	Annual Dues	Initiation Fee	TOTAL
Manufacturer.....	\$825	\$200	\$1025
Distributor/Dealer.....	\$285	\$100	\$385
Contractor/Integrator.....	\$285	\$100	\$385
Manufacturer's Representative.....	\$285	\$100	\$385
Full Associate Member.....	\$285	\$100	\$385
Energy Management Company.....	\$200	\$100	\$300
Regular Associate Member.....	\$200	\$100	\$300
Retiree Member.....	Complimentary	\$0	\$0
Student Member.....	Complimentary	\$0	\$0

**NOTE:** A FULL 12-MONTH DUES PAYMENT MUST BE RECEIVED WITH THIS APPLICATION. The Association's Membership Year is January 1 through December 31. Dues payments that extend beyond the first Membership Year will be applied to the second year's dues.

**FULL PAYMENT MUST BE RECEIVED WITH APPLICATION.**

### 3. Membership Dues (Please fill in the appropriate TOTAL amount from the above dues schedule.)

Membership Dues \$ \_\_\_\_\_  
Membership Plaque (optional)\*\* \$ 39.95\*\*  
On-Site Power Reference Book (optional)\*\* \$ 125.00\*\*  
**Florida Residents:** Add 6.5% Sales Tax to \*\* items \$ \_\_\_\_\_  
Continental US Residents add \$5 shipping/handling to \*\* items. \$ \_\_\_\_\_  
Non Continental US Residents should call EGSA  
Headquarters for shipping charges for \*\* items. **TOTAL** \$ \_\_\_\_\_

### 4. Payment Method (Payable in US\$ drawn on U.S. bank, U.S. Money Order, or American Express)

☐ Check # \_\_\_\_\_ Amount Due \$ \_\_\_\_\_  
☐ Money Order  
☐ Mastercard ☐ Visa ☐ American Express  
Card # \_\_\_\_\_ Exp. Date \_\_\_\_\_  
Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_

### 5. Products/Services Please describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or Distributor/Dealer, please indicate which manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your school, your major and your anticipated graduation date:

Do you buy AND sell equipment? ☐ Yes ☐ No

Do you manufacture packaged equipment? ☐ Yes ☐ No

#### Available Codes:

01 ---Batteries/Battery Chargers  
02 ---Control/Annunciator Systems  
29 ---Education  
30 ---Emission Control Equipment  
04 ---Enclosures, Generator Set  
05 ---Engines, Diesel or Gas  
06 ---Engines, Gas Turbine  
07 ---Engine Starters/Starting Aids  
08 ---Filters, Lube Oil, Fuel or Air  
28 ---Fuel Cells  
03 ---Fuel Tanks and Fuel Storage Systems

09 ---Generator Laminations  
10 ---Generator Sets  
11 ---Generators/Alternators  
12 ---Governors  
13 ---Heat Recovery Systems  
14 ---Instruments and controls, including meters, gauges, relays, contactors, or switches  
15 ---Load Banks  
16 ---Motor Generator Sets  
17 ---Radiator/Heat Exchangers  
18 ---Relays, Protective or Synchronizing

19 ---Silencers/Exhaust Systems/Noise Abatement  
20 ---Solenoids  
21 ---Switchgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels  
22 ---Trailers, Generator Set  
23 ---Transformers  
24 ---Uninterruptible Power Supplies  
25 ---Vibration Isolators  
26 ---Voltage Regulators  
27 ---Wiring Devices or Receptacles

#### Enter codes here:

**Products sold:** \_\_\_\_\_

**Products rented:** \_\_\_\_\_

**Products serviced:** \_\_\_\_\_

### 6. Sponsor(s): A "Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name \_\_\_\_\_ Company Name \_\_\_\_\_

### 7. Official Representative's Authorization

Signature \_\_\_\_\_ Date \_\_\_\_\_

## Parker Launches EZ Power

EGSA Member Steve Parker has announced the launch of EZ Power, a new Distributor/Dealership in Ocala, FL. Parker has been an EGSA Member since he worked for Penn DDA from 1980-1994. He remained a member from 1994-2004 with Emergency Systems Service Co., Inc., and at CJ's from 2004 to the present.

"I've learned a lot being associated with EGSA, and I've made a million contacts," said Parker. "I'm looking forward to being active in EGSA with EZ Power".

Parker launched EZ Power to provide the industry with a source for parts and rentals.

"Everyone works on all brands, but they may not have access to good parts pricing and quick delivery or rental support. So, EZ power was born," said Parker. "Our motto is 'EZ 2 do business with'".

EZ Power currently occupies JRS Custom Fabrication's previous location in Ocala, FL; phone 352-368-6000.

## Saft to Supply Li-ion Batteries to the U.S. Navy

Saft has announced it has signed two contracts totaling more than \$1 million with DRS Technologies to supply its lithium-ion (Li-ion) energy storage systems for the Integrated Fight Through Power (IFTP) system for the U.S. Navy's DDG 1000 destroyers.

"Given the U.S. Navy's stringent battery requirements, the introduction of our Li-ion technology into the DDG 1000 platform marks a huge milestone for Saft," said Thomas Alcide, Saft Specialty Battery Group General Manager. "We are excited to receive

these two contracts and the opportunity to further our partnership with the U.S. Navy by positioning ourselves as a trusted and reliable battery supplier."

The two rechargeable Li-ion batteries will support key functions within the IFTP system, which sustains the destroyers' Integrated Power Systems (IPS) and provides the means to convert and distribute the ships' service power to various shipboard weapons and sensor systems, as well as various auxiliary systems.

Under the first contract, Saft will develop 12 batteries using VL 34P cells for each destroyer with custom electronics, housing and an integrated charger to support the IFTP's Load Center breakers, giving them the ability to shut down electronically, even when there is no power. Under the second contract, Saft will provide 22 batteries, also based on VL 34P cells, for each ship for the IFTP's Housekeeping Power Supply (HKPS). The batteries will supply onboard back-up power, carrying the destroyers' loads until they can be shut down.

The DDG 1000 destroyer is the first in a class of the U.S. Navy's multi-mission surface combatants tailored for the littoral, air and sub-surface warfare. It operates as part of a joint maritime fleet, assisting Marine strike forces ashore.

Saft is a leading maker of high-tech batteries for industry. For more information, [www.saftbatteries.com](http://www.saftbatteries.com).

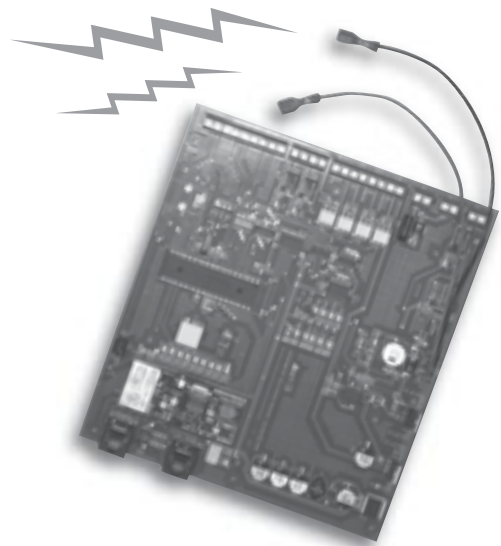
DRS Technologies, a wholly owned subsidiary of Finmeccanica S.p.A., is a leading supplier of integrated products, services and support to military forces, intelligence agencies and prime contractors worldwide. For more information visit [www.drs.com](http://www.drs.com)



## The Generator Monitoring System you've been waiting for.

**Not just monitoring,  
but a service  
management tool!**

- ▶ Low cost
- ▶ Easy to install
- ▶ No programming required
- ▶ Universal for all generator brands and sizes
- ▶ Notifications by e-mail and cellular text messaging
- ▶ 3 ways to communicate (cellular, phone, ethernet)
- ▶ Automatic monthly e-mail to customer (generator activity documentation)
- ▶ Remote starts
- ▶ Internet-based



# GENTRACKER

Generator Solutions, Inc.  
533 Hayward Ave. N.  
Oakdale, MN 55128  
651-770-9405  
[www.dealers.gentracker.com](http://www.dealers.gentracker.com)

## Taking Generator Service to the Next Level

## T. Boone Pickens Shelves Pampa Wind Project in Texas Panhandle

CNN reports that billionaire oil man T. Boone Pickens is shelving plans to build the world's largest wind farm.

Set in the Texas Panhandle, the Pampa Wind Project was the centerpiece of The Pickens Plan, Pickens' campaign to wean the United States off foreign oil and switch to wind and natural gas. The \$12 billion plan was to be complete in 2014 and provide enough electricity to power 1.3 million homes. Pickens said he will honor commitments for 667 wind turbines he has already ordered.

## Russia Building World's First Floating Nuclear Power Plant

Concern Energoatom PLC and Baltiysky Zavod PLC, a part of United Industrial Corporation (OPK) have signed an agreement to construct and supply the head floating power-generating unit for the first floating nuclear power plant (FNPP). The contract covers the construction, launching, rebuilding and testing of the power

plant. Construction of the floating power-generating unit has already begun and is due to be complete by the second quarter of 2012. Following testing, it is expected to begin operations in Kamchatka's port of Viluchinsk by the end of 2012.

The 21,500-ton FNPP is 472 feet long and 98 feet wide and houses two KLT40-S marine reactors with an aggregate power of 70 megawatts. Construction cost has been estimated at \$274 million. The FNPP is designed to be based in coastal areas and used to generate electricity and heat; waste heat from the reactors will be able to desalinate up to 220 tons of seawater daily. Design specifications project a reactor service life of 38 years, and the plant can be operated for 10-12 years without replacing its nuclear fuel.

## MWM Reclaims Name, Moves Into North American Market

MWM, formerly known as Deutz Power Systems, has opened new U.S. headquarters in Atlanta, Georgia. The company provides renewable energy solutions for a

variety of industries through the development of highly efficient, environmentally friendly industrial engines which convert both natural gas and bio-gas into electricity. MWM opened its service facility in Salem, OH last year.

MWM creates eco-friendly solutions for producing clean, renewable energy across industries and around the globe using a variety of customized solutions ranging from the use of methane gas emitted by a landfill in Illinois, to natural gas in California, or bio-gas in Schleswig-Holstein.

MWM traces its roots to 1871 when it was founded by the famous auto inventor Carl Benz. The name originally stood for the former Motoren-Werke Mannheim of Mannheim, Germany. Reclaiming the MWM name allows the European-based company to draw upon its heritage of over 138 years of experience in precision engineering. Today, the company has more than 1,150 employees with worldwide sales and service subsidiaries in 10 countries. For more information, visit [www.MWM.net](http://www.MWM.net). ■



## Seeking Manufacturer Principals

Aggressive Mid-South area Manufacturer's Representative firm is seeking quality onsite power equipment products to complement their lines.

**Power Products, Inc.**  
Attention: Jerry Severin, President  
[Jerry@PowerProductsUSA.com](mailto:Jerry@PowerProductsUSA.com)  
**901-854-6040**





## NEW EGSA MEMBERS

MF=Manufacturer DD=Distributor/Dealer CI=Contractor/Integrator MR=Manufacturers Rep EM=Energy Management Co.  
AA=Trade Publication AB=Trade Association AC=Engineer AD=End-User AE=Service AG=Educational Institution AR=Retiree AF=Student

### Air Systems, LLC ..... (DD)

Louisville, KY  
(502) 452-6312 Fax: (502) 458-0791  
Contact: Ryan Moorman, General Manager  
Business: Air Systems is in the air compressor business and the generator business. We have a sales, service and parts department. We rent Doosan equipment.

### Aragon, Juan Carlos ..... (AF)

Port Hueneme, CA  
(805) 487-9678  
Contact: Juan Carlos Aragon, CEI CSCWJ  
Business: Student studying power generation at Univeristy of La Verne, hoping to graduate next year.

### Arima Engineering Company Limited ..... (CI)

Kingston, Jamaica  
(876) 929-6969 Fax: (876) 920-6039  
Contact: Ricardo Hunter, Managing Director  
Business: Our company provides electrical contracting services. We purchase materials and equipment from Distributor/Dealers, Manufacturers or retailers, adding value through installation.

### Electric Controls & Components, Inc. .... (MR)

Coral Springs, FL  
(954) 344-8884 Fax: (954) 827-0588  
Contact: Mario E. Jones, President  
Business: An export management company with over 25 years of experience in Latin America. Currently represent Marathon Electric and Thomson Technology.

### Les Entreprises L.M Inc. .... (MR)

Montreal, PQ Canada  
(800) 265-2831 Fax: (514) 523-7882  
Contact: Jean-Charles Rivet, Sales Rep.  
Business: L.M Enterprises is an electric motor shop that specializes in custom generator projects and distributes Baldor and Leroy Somer

### Wittich, Matthew ..... (AF)

Allegan, MI  
(760) 521-0742  
Contact: Matthew Wittich, Student  
Business: Student enrolled in Cummins Power Generation factory training program at Universal Technical Institute in Avondale, AZ. I will graduate in July of 2009.



### GENERATOR EXERCISE MONITOR

*The GEM alerts you when a stand-by Gen Set fails to perform a scheduled exercise, and thus may not respond during a power outage. Easily connected to a dialer, it's perfect for Cell Tower sites and other facilities which may not have personnel on-site 24/7. Only \$159.*

**We now offer Replacements for these hard to find Onan® Controls: 300-0679 & 0680, 300-0681 & 0682**

**Other Replacements Available** for many obsolete and current Onan controls & regulators, used in Marine, RV and standby gen set applications. These have set standards for performance and value for over 20 years. We offer products which not only meet but exceed the original specifications -- at a considerable savings -- and have a 2-Year Warranty!

**About Our Reman Service:** We've been rebuilding Generator Controls since 1978 and now do 300+ Onan, Kohler, Generac, ASCO & other P/N's, most 3-5 days in-house, all with a One-Year Warranty!

**Call for our Current Reman / New Products Price List !**

**Put the G-MAN On the Case!**



**FLIGHT SYSTEMS**

**Toll-Free (US/Cnd): 800-403-3728 Fax: 717-932-9925**

**•Ship to: 505 Fishing Creek Rd, Lewisberry, PA 17339**

**Visit [www.flightsystems.com](http://www.flightsystems.com) to see all our products & services**

### GENCON® II pro... The World Leader In Generator-Set Control



- ☒ Auto Synchronizer
- ☒ Peak Shaving
- ☒ Load Sharing
- ☒ Measurements
- ☒ Engine Management
- ☒ Protections
- ☒ Data Logging
- ☒ ModBus ASCII/RTU/TCP

**UL Certified**

USA Support Tel: +1 (201) 739-2351



**WEXLER**

**COMPUTER SYSTEMS  
DEVELOPMENT LTD.**

**E-mail: [info@wexler.co.il](mailto:info@wexler.co.il)**

**Tel: +972 (3) 965-5858**

**<http://www.wexler.co.il>**

**Fax: +972 (3) 965-5810**

## POWER GENERATION TECHNICIANS

Cummins NPower, the area's exclusive engine & power generation systems distributor for Cummins and Onan products is seeking qualified Field Service Power Generation Technicians to diagnose, troubleshoot, & repair electrical generator systems & related engine mechanical failures, & utility transfer switches & switchgears. Positions are available in Illinois, Wisconsin & North Dakota. To view all open positions visit our website, [www.cumminsnpower.com](http://www.cumminsnpower.com). To apply, send a resumé via email to [npowerhr@cummins.com](mailto:npowerhr@cummins.com) or fax to 651-286-2111. EEO/AA

## Regional Sales Manager

DEIF, a world-class global supplier of controls for power generation, is looking for a RSM to cover the central and eastern parts of US/Canada. Technical Sales experience in the distributed generation market is required. BS degree preferred; seasoned professional with over 10 years experience related to electrical power is required. Position is located Fort Collins, CO, with a future move to be closer to customers possible after the first year. For more details please see complete posting on EGSA website or contact [us@deif.com](mailto:us@deif.com).

## Generation Sales

Central Power Systems & Services, Inc. – Two (2) Generator Sales positions covering Central Kansas. We offer a strong base wage, incentive program and a full benefit package (including FREE MEDICAL insurance, FREE LIFE insurance, paid vacation, profit sharing and 401(k), etc.). Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to [jobs@cpower.com](mailto:jobs@cpower.com) EOE

## Business Builder Seeks Opportunities

Looking for an experienced business builder and channel developer for your company? I have years of experience in sales, marketing and general management. Acute understanding of goals. Growing family / lifestyle businesses a specialty. If you want to get to the next level, contact me. permanent or short term. Nationwide. Please respond to [J.Kellough@EGSA.org](mailto:J.Kellough@EGSA.org). (Reference PLMJ09JB-1).

## Power Services Sales

ElecComm Power Services ('EPS') is a company that specializes in the rental and service of emergency power. EPS is offering a tremendous opportunity for someone looking to join a young company that is on the fast track within the power services market. The right candidate will have the chance to grow as the company grows. Candidate must have 3-5 yrs of business/ sales experience in distributed generation market. Company is based in Boston, but sales territory would include all of New England. Send all inquiries to [bkerins@eleccommps.com](mailto:bkerins@eleccommps.com).

## Generation Technicians

Due to our continued growth, Central Power Systems & Services, Inc. has immediate openings for Generator Technicians at several of our Missouri, Kansas and Oklahoma facilities. We offer a strong base wage and a full benefit package (including FREE MEDICAL insurance). Fax a cover letter, salary requirements and your resume to 816-781-4518 or e-mail it to [jobs@cpower.com](mailto:jobs@cpower.com) EOE

## GENERATOR SERVICE TECHNICIANS

KELLY GENERATOR & EQUIPMENT, INC., the mid-Atlantic leader in standby electrical generators is seeking experienced Generator Technicians. We are a full service distributor of emergency standby and prime power located in the mid-Atlantic region that covers Delaware, Maryland, Northern Virginia, West Virginia and Washington, DC.

We offer SALES, SERVICE, PARTS & RENTALS

- We have an extensive Service & Parts Department to back up your work.
- We offer factory training on the lines we represent as well as "in house" training.
- We offer medical, dental, vision, 401(k), profit sharing, short and long term disability, paid holidays, annual leave, overtime and paid "On Call."

Must have a High School Diploma (Vo-tech or GED), 3 – 5 years experience servicing industrial generator sets and associated equipment. Must be able to service, repair and troubleshoot the engine, as well as the alternator end and controls of the equipment. MILITARY A PLUS! Visit us on our website at [www.kge.com](http://www.kge.com). Fax RESUMES to 410-257-5227 or e-mail to [dkelly@kge.com](mailto:dkelly@kge.com).

## Generator Set Sales/Service

Experienced sales/service engineer needed by southern California company to sell engine generator sets.

Please respond to [J.Kellough@EGSA.org](mailto:J.Kellough@EGSA.org) (Reference PLND06JB-1).

## RENTAL SALES

KELLY GENERATOR & EQUIPMENT, INC, the mid-Atlantic leader in standby electrical generators is seeking an experienced RENTAL SALES person to join our team. We are a full service distributor of emergency standby and prime power located in the mid-Atlantic region: Delaware, Maryland, Washington DC, Northern Virginia and West Virginia.

Develop strong relationships with electrical and general contractors, home builders, event companies, industrial and commercial end users and rental houses. Focus will be on the rental (and sales) of mobile generator sets as well as renting load banks. We offer a solid base with commission, medical, dental, vision, 401(k), profit sharing and more. FAX resumes to 410-257-5227 or e-mail [dkelly@kge.com](mailto:dkelly@kge.com).

## EXPERIENCED POWER GENERATION ASSOCIATES WANTED!

Penn Power Systems, Northeast Energy Systems and Western Energy Systems, leaders in the power generation business, are seeking experienced professionals for various positions within our company. We are actively seeking experienced field service technicians in the Northeast and Western U.S. markets. Candidates should be familiar with natural gas and diesel prime movers with industry experience and knowledge of systems and controls. We are also seeking business development managers in several markets. Minimum requirements include a 4 year degree and experience in power systems sales. Penn Power Systems and its divisions, offer industry competitive salaries, medical, 401(k), and vacation benefits. All interested parties should send resumes and work related history to [jobs@pennpowersystems.com](mailto:jobs@pennpowersystems.com) or call 1-877-736-4473. EOE M/F/D/V

## Generator Service Technician

Johnson & Towers, Inc. A leader in the power systems industry is currently accepting applications for an experienced Generator Field Service Technician. Immediate opening for an experienced Generator Technician. Capable of maintenance, repairs and troubleshooting to diesel and gaseous generators for a variety of commercial and government clients. Ideal candidate would possess the following: abilities to repair, troubleshooting and perform start up of generators and switchgear. Ability to work alone or in a team environment. The availability and desire to take a full-time permanent field service position. A clean driving record, background. Candidate must possess at least 3 years experience working on Generators and Switch Gear. Benefits include health, dental, life, short and long-term disability plans, along with a 401k plan. Please submit resume to [rdiem@johnsontowers.com](mailto:rdiem@johnsontowers.com)

## Generator Field Technician

PM Technologies, LLC has several immediate openings for Generator Technicians. We are located and operate in Michigan, Ohio and Northern Indiana. High School diploma or equivalent a must. Military experience a plus. Must be able to troubleshoot and repair the engine (diesel and gaseous) as well as the generator end. Customer interaction will be required on a daily basis. We need highly motivated, self sufficient people to assist in growing our expansion efforts at new branch locations. Benefits include company vehicle, 401k, health, dental and vision coverage's as well as paid bonuses for new account procurement. Please Fax resumes to 248.374.6408 or email to [dpopp@pmtech.org](mailto:dpopp@pmtech.org)

## Power Systems Sales

Pacific Power Products has an opening for a salesperson in our Seattle WA territory. Person must be predisposed to outside sales. The position has support from dedicated project managers, sales coordination and admin. Person should have working knowledge of power generation equipment but all candidates with applicable skills will be considered. We are the distributor for MTU-Onsite Energy and Waukesha. Compensation includes base, car allowance, health insurance and 401K. Forward resumes to [relder@pac-power.com](mailto:relder@pac-power.com)

## EGSA Job Bank Guidelines

EGSA will advertise (free of charge) EGSA Member company job openings in the Job Bank.

**Free use of the Job Bank is strictly limited to companies advertising for positions available within their own firms. Companies who are not members of EGSA and third-party employment service firms who service our industry may utilize the Job Bank for a \$300 fee.**

Blind box ads using the EGSA Job Bank address are available upon request; company logos may be included for an additional fee. EGSA reserves the right to refuse any advertisement it deems inappropriate to the publication. Please send your classified ad (limited to about 50 words) to: EGSA Job Bank, 1650 S. Dixie Hwy, Suite 400, Boca Raton, FL 33432. Or, send it via e-mail it to: [J.Kellough@EGSA.org](mailto:J.Kellough@EGSA.org)

# Standby for Big Power



Every Baldor generator set, standard or custom, is designed and engineered to meet the individual needs of your application. Whether it's a 2,000 kW genset to keep your industrial facility up and running, or a 30 kW generator for your remote agricultural needs, Baldor has the right products to meet your need.

Engineered to the highest performance standards and built with unmatched quality, Baldor gensets give you the power you need, when you want it.

**BALDOR®**  
**GENERATORS**

**[baldor.com](http://baldor.com)**

©2008 Baldor Electric Company

**BALDOR**  
**GENERATORS**





# Choose Wisely

## Selecting a Power Switching and Control Partner Is a 20-Year Commitment

### Make the right decision.

Do you want a low-cost partner? Or one who's a global leader in power switching and control products, solutions and services?

Consider a partner who offers:

- Advanced and innovative technology.
- The most robust products with legendary reliability.
- Sophisticated connectivity.
- Seasoned, order-to-commissioning project management expertise.
- The largest and most responsive service and technical support network.

- The largest staff of dedicated power transfer and control engineers.
- Commitment to support customer expectations.
- And more than a century of experience.

When your reputation is on the line. When the stakes are high. And when there's no room for error, select ASCO to be sure.

ASCO Keeps Your Power On®.  
Call 800-800-ASCO (2726) or visit [ascopower.com](http://ascopower.com).



**ASCO®**

  
**EMERSON**  
Network Power